(FILE 'HOME' ENTERED AT 08:56:58 ON 11 JAN 2001)

L4 0 L1 AND L3
L5 49103 TLC
L6 70 CYTOTOXIC T CELL LYSIS
L7 0 L1 AND L6
L8 0 INF? ADJ INDUCTION
L9 [illegible] VACCINE
L10 1509 FUSION PARTNER
L11 54 L10 AND L9
L12 4 L11 AND L1
L13 0 INFLUENZA? ADJ NS1
L14 0 NON STRUCTURAL PROTEIN OF INFLUENZA VIRUS
L15 0 INFLUENZA ADJ VIRUS
L16 33557 INFLUENZA VIRUS
L17 3112 NS1
L18 535 L16 AND L17
L19 20500 TH1
L20 0 L18 AND L19
L21 0 INF-R SECRETION
L22 50 RSPONSES
L23 0 L19 AND L22
L24 25859 CTL
L25 42 L24 AND L18
L26 1509 FUSION PARTNER
L27 0 L26 AND L25
L28 76300 FUSION PROTEIN
L29 182885 VACCINE
L30 3644 L29 AND L28
L31 2 L30 AND L25

=> D L31 BIB TI SO AU ABS 1-2

L31 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2001 ACS
AN 1994:407304 CAPLUS
DN 121:7304
TI Recombinant **influenza virus vaccine** compositions
IN Dillon, Susan B.; Jones, Christopher S.; Scott, Miller O.; Shatzman, Allan
PA SmithKline Beecham Corp., USA
SO PCT Int. Appl., 58 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9406468	A1	19940331	WO 1992-US7312	19920917

W: AU, CA, JP, KR, US
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, SE
PRAI US 1991-751898 19910830
TI Recombinant **influenza virus vaccine** compositions
SO PCT Int. Appl., 58 pp.

CODEN: PIXXD2
IN Dillon, Susan B.; Jones, Christopher S.; Scott, Miller O.; Shatzman, Allan
AB A novel **vaccine** against various subtypes of influenza A is comprised of HA266-222 and, optionally, its N-terminal sequence Met-Leu-Ser-Thr-Arg-Ser. Plasmid pH1HA266-222 contg. the **NS1** gene and the gene for HA266-222 of **influenza virus** A/PR/8/34 was prepd. and used for the expression in Escherichia coli. Induction by the highly purified HA266-222 of protective class I MHC-restricted cytotoxic T-lymphocyte (**CTL**) and immunity from lethal virus challenge of was demonstrated in mice. The protection effects in human of a **vaccine** prepn. contg. Al2O3 and HA266-222 or NS11-81HA266-222 were also shown, in which a neutralizing antibody was not detected.

L31 ANSWER 2 OF 2 MEDLINE
AN 88140304 MEDLINE
DN 88140304
TI HA2 subunit of influenza A H1 and H2 subtype viruses induces a protective cross-reactive cytotoxic T lymphocyte response.
AU Kuwano K; Scott M; Young J F; Ennis F A
CS Department of Medicine, University of Massachusetts Medical School, Worcester 01655.
NC 1RO1-AI19378 (NIAID)
5 T32 AI 107272 (NIAID)
SO JOURNAL OF IMMUNOLOGY, (1988 Feb 15) 140 (4) 1264-8.
Journal code: IFB. ISSN: 0022-1767.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals; Cancer Journals
EM 198806
TI HA2 subunit of influenza A H1 and H2 subtype viruses induces a protective cross-reactive cytotoxic T lymphocyte response.
SO JOURNAL OF IMMUNOLOGY, (1988 Feb 15) 140 (4) 1264-8.
Journal code: IFB. ISSN: 0022-1767.
AU Kuwano K; Scott M; Young J F; Ennis F A
AB Influenza H1 subtype-specific **CTL** can be induced by secondary stimulation of a hybrid protein of the first 81 amino acids of the viral **NS1** non-structural protein and the HA2 subunit of A/Puerto Rico/8/34(H1N1) hemagglutinin. In addition, a derivative of this protein with 65 amino acids deleted from the N-terminal end of HA2 can also generate H1 subtype-specific **CTL** in bulk cultures. **CTL** clones established by stimulation with the derivative protein demonstrated cross-reactive lysis of target cells infected with virus strains of the H1 and H2 subtypes. Cold target competition experiments with **CTL** clones as effectors demonstrated that the Ag specificity between these two hybrid proteins is identical. Adoptive transfer of the **CTL** clone significantly reduced virus titers in the lungs of mice infected with the virus strains of the H1 or H2 subtype but not those infected with the H3 subtype virus in vivo, which reflects the in vitro **CTL** clone activity. These experiments demonstrate that an epitope on the hemagglutinin that is conserved on virus strains of the H1 and H2 subtypes induces a protective **CTL** response. These results suggest an alternative approach for developing influenza **vaccines** by using conserved antigenic sites on the hemagglutinin HA2 subunit to avoid the problem of frequent antigenic mutations of the HA1 subunit antibody binding sites.

=> D L12 BIB TI SO AU ABS 1-4

L12 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2001 ACS
AN 1999:511245 CAPLUS
DN 131:140508
TI Tumor-associated antigen derivatives of MAGE proteins and their use in cancer **vaccine** therapy
IN Cabezon, Silva Teresa; Cohen, Joseph; Slaoui, Moncef Mohamed; Vinals Bassols, Carlota
PA Smithkline Beecham Biologicals S.A., Belg.; Cabezon Silva, Teresa
SO PCT Int. Appl., 74 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9940188	A2	19990812	WO 1999-EP660	19990202
	WO 9940188	A3	19991014		
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 9927220	A1	19990823	AU 1999-27220	19990202
	BR 9907691	A	20001114	BR 1999-7691	19990202
	EP 1053325	A2	20001122	EP 1999-907476	19990202
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI				
	NO 2000003958	A	20001004	NO 2000-3958	20000804
PRAI	GB 1998-2543	19980205			
	GB 1998-2650	19980206			
	WO 1999-EP660	19990202			

TI Tumor-associated antigen derivatives of MAGE proteins and their use in cancer **vaccine** therapy
SO PCT Int. Appl., 74 pp.
CODEN: PIXXD2
IN Cabezon, Silva Teresa; Cohen, Joseph; Slaoui, Moncef Mohamed; Vinals Bassols, Carlota
AB The present invention relates to derivs. of MAGE proteins and their use in
cancer **vaccine** therapy. In particular, the protein derivs. are:
(1) fusion proteins comprising an antigen encoded by the MAGE family of

blocked and/or (b) genetically modified MAGE proteins provided with an

formation. The preferred MAGE proteins are MAGE A1 and MAGE A3. The

as lipoprotein D from Haemophilus influenzae, the NS1 (hemagglutinin) non-structural protein from influenzae virus, and/or the

The novel MAGE protein purifn. process of the invention comprises
the disulfide bonds, blocking the resulting free thiol group with a blocking group, and subjecting the resulting deriv. to one or more chromatog. purifn. steps.

L1. ANSWER 1 OF 4 CAPLUS COPYRIGHT 2001 ACS
AN 1999:468468 CAPLUS

TI Fb and Ff fusion proteins for vaccination against human papilloma virus
IN Tielemans, Wilfried L. J.; Gerard, Catherine Marie Ghislain
PA Smithkline Beecham Biologicals S. A., Belg.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9916884	A2	19990408	WO 1998-EP6040	19980917

SO PCT Int. Appl., 66 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9916884	A1	19990408	WO 1998-EP6040	19980917

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG,

KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX,
NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT,
UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES,
FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI,
CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

AU	9910255	A1	19990423	AU 1999-10255	19980917
EP	1015596	A1	20000705	EP 1998-952625	19980917
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI				
BR	9812547	A	20000725	BR 1998-12547	19980917
NO	2000001508	A	20000518	NO 2000-1508	20000323
PRAI	GB 1997-20585	19970926			
	WO 1998-EP6040	19980917			

TI Fusion proteins comprising HIV Tat and/or Nef proteins and their production with recombinant cells for use as **vaccines**

SO PCT Int. Appl., 66 pp.
CODEN: PIXXD2

IN Bruck, Claudine; Godart, Stephane Andre Georges; Marchand, Martine

AB The invention provides (a) an HIV Tat protein or deriv. thereof linked to either (i) a **fusion partner** or (ii) an HIV Nef protein or deriv. thereof; or (b) an HIV Nef protein or deriv. thereof linked to either (i) a **fusion partner** or (ii) an HIV Tat protein or deriv. thereof; or (c) an HIV Nef protein or deriv. thereof linked to an HIV Tat protein or deriv. thereof and a **fusion partner**. The invention further provides for a nucleic acid encoding such a protein and a host cell, such as Pichia Pastoris, transformed with the aforementioned nucleic acid. The recombinant fusion proteins may be used as AIDS **vaccines**. Thus, Nef-Tat fusions were prepd. with recombinant P. pastoris. In mice, the immune response directed against the fusion protein was characterized by high antibody responses with at least 50% IgG1. Addnl., strong CMI responses were obsd.

RE.CNT 5
RE
(1) Azad, A; JOURNAL OF GENERAL VIROLOGY 1994, V75(3), P651 CAPLUS
(2) Barsoum, J; WO 9404686 A 1994 CAPLUS
(3) Bodeus, M; JOURNAL OF GENERAL VIROLOGY 1995, V76(6), P1337 CAPLUS
(4) Janson, H; INFECTION AND IMMUNITY 1992, V60(4), P1336 CAPLUS
(5) Salfeld, J; EMBO JOURNAL 1990, V9(3), P965 CAPLUS

L12 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2001 ACS
AN 1999:166640 CAPLUS
DN 130:222110
TI Fusion proteins of human papillomavirus E6 and E7 stimulate a type 1 T-cell response
IN Bruck, Claudine; Cabezon Silva, Teres; Delisse, Anne-Marie Eva Fernande; Gerard, Catherine Marie Ghislaine; Lombardo-Bencheikh, Angela
PA Smithkline Beecham Biologicals S.A., Belg.
SO PCT Int. Appl., 95 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9910375	A2	19990304	WO 1998-EP5285	19980817
	WO 9910375	A3	19990610		

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

=> D L25 BIB TI SO AU ABS 1-42

L25 ANSWER 1 OF 42 CAPLUS COPYRIGHT 2001 ACS
AN 2000:617845 CAPLUS
DN 133:295012
TI Contemporary analysis of MHC-related immunodominance hierarchies in the CD8+ T cell response to influenza A viruses
AU Belz, Gabrielle T.; Stevenson, Philip G.; Doherty, Peter C.
CS Department of Immunology, St. Jude Children's Research Hospital, Memphis, TN, 38105, USA
SO J. Immunol. (2000), 165(5), 2404-2409
CODEN: JOIMA3; ISSN: 0022-1767
PB American Association of Immunologists
DT Journal
LA English
TI Contemporary analysis of MHC-related immunodominance hierarchies in the CD8+ T cell response to influenza A viruses
SO J. Immunol. (2000), 165(5), 2404-2409
CODEN: JOIMA3; ISSN: 0022-1767
AU Belz, Gabrielle T.; Stevenson, Philip G.; Doherty, Peter C.
AB Early studies of **influenza virus**-specific CD8+ T cell-mediated immunity indicated that the level of **CTL** activity assocd. with H2Db is greatly diminished in mice that also express H2Kk. Such MHC-related immunodominance hierarchies are of some interest, as they could lead to variable outcomes for peptide-based vaccination protocols in human populations. The influence of H2Kk on the H2Db-restricted response was very apparent for the influenza DbPA224 epitope and was also [illegible] H2Kk is also present, the response is still substantial. A further, MHC-related effect was also identified for the KkNS1152 epitope, which was consistently assocd. with a greater CD8+IFN-.gamma.+ response in H2KkDb recombinant than in (H2KkDk .times. H2KbDb)F1 mice. The diminished DbPA224 response in H2k.times.bF1 mice was characterized by loss of a

prominent V.beta.7 TCR responder phenotype, supporting the idea that TCR deletion during ontogeny shapes the available repertoire. The overall conclusion is that these MHC-related immunodominance hierarchies are more subtle than the early **CTL** assays suggested and, although inherently unpredictable, are unlikely to cause a problem for peptide-based vaccine strategies.

RE.CNT 23
RE
(3) Belz, G; J Virol 2000, V74, P3486 CAPLUS
(5) Busch, D; Immunity 1998, V8, P353 CAPLUS
(6) Butz, E; Immunity 1998, V8, P167 CAPLUS
(7) Deckhut, A; J Immunol 1993, V151, P2658 CAPLUS
(9) Flynn, K; Immunity 1998, V8, P683 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 2 OF 42 CAPLUS COPYRIGHT 2001 ACS
AN 1999:413985 CAPLUS
DN 131:168945
TI Human CD8+ and CD4+ T lymphocyte memory to influenza A viruses of swine and avian species
AU Jameson, Julie; Cruz, John; Terajima, Masanori; Ennis, Francis A.
CS Center for Infectious Disease and Vaccine Research, University of Massachusetts Medical Center, Worcester, MA, 01655, USA
SO J. Immunol. (1999), 162(12), 7578-7583
CODEN: JOIMA3; ISSN: 0022-1767
PB American Association of Immunologists
DT Journal
[illegible]
TI Human CD8+ and CD4+ T lymphocyte memory to influenza A viruses of swine and avian species
[illegible]
CODEN: JOIMA3; ISSN: 0022-1767
AU Jameson, Julie; Cruz, John; Terajima, Masanori; Ennis, Francis A.
AB Recently, an avian influenza A virus (A/Hong Kong/156/97, H5N1) was isolated from a young child who had a fatal influenza illness. All eight RNA segments were of avian origin. The H5 hemagglutinin is not recognized
by neutralizing Abs present in humans as a result of infection with the human H1, H2, or H3 subtypes of influenza A viruses. Subsequently, five other deaths and several more human infections in Hong Kong were assocd. with this avian-derived virus. We investigated whether influenza A-specific human CD8+ and CD4+ T lymphocytes would recognize epitopes on influenza A virus strains derived from swine or avian species, including the 1997 H5N1 Hong Kong virus strains. Our results demonstrate that adults living in an urban area of the U.S. possess influenza A cross-serotype reactive CD8+ and CD4+ **CTL** that recognize multiple epitopes on influenza A viruses of other species. Bulk culture cytotoxicity was demonstrated against avian and human influenza A viruses.
Enzyme-linked immunospot assays detected precursor **CTL** specific for both human **CTL** epitopes and the corresponding A/HK/97 viral sequences. We hypothesize that these cross-reactive **CTL** might provide partial protection to humans against novel influenza A virus strains introduced into humans from other species.

RE.CNT 32
RE
(7) Eichelberger, M; J Exp Med 1991, V174, P875 CAPLUS
(8) Engelhard, V; Chem Immunol 1993, V57, P39 CAPLUS
(9) Gotch, F; Nature 1987, V326, P881 CAPLUS
(10) Green, S; J Virol 1993, V67, P5962 CAPLUS
(12) Jameson, J; J Virol 1998, V72, P8682 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 3 OF 42 CAPLUS COPYRIGHT 2001 ACS
AN 1999:365510 CAPLUS
DN 131:198325

TI High-Yield Reassortant Influenza Vaccine Production Virus Has a Mutation at an HLA-A2.1-Restricted CD8+ **CTL** Epitope on the **NS1** Protein
AU Terajima, Masanori; Jameson, Julie; Norman, Joyce E.; Cruz, John; Ennis, Francis A.
CS Center for Infectious Disease and Vaccine Research, University of Massachusetts Medical School, Worcester, MA, 01655, USA
SO Virology (1999), 259(1), 135-140
CODEN: VIRLAX; ISSN: 0042-6822
PB Academic Press
DT Journal
LA English
TI High-Yield Reassortant Influenza Vaccine Production Virus Has a Mutation at an HLA-A2.1-Restricted CD8+ **CTL** Epitope on the **NS1** Protein
SO Virology (1999), 259(1), 135-140
CODEN: VIRLAX; ISSN: 0042-6822
AU Terajima, Masanori; Jameson, Julie; Norman, Joyce E.; Cruz, John; Ennis, Francis A.
AB Current **influenza virus** vaccines are prepd. using high-yield reassortant virus strains obtained from a mixed infection of the new virus strain and a prototype high-yielding virus strain. The high-titered reassortant virus strain used as vaccine seed virus possesses the recent virus HA and NA and contains the internal genes from the high-growing prototype parent. The authors established a human CD8+ cytotoxic T cell (**CTL**) line, 10-2C2, which recognizes an HLA-A2.1-restricted influenza A virus H1, H2, H3 cross-reactive T cell epitope on amino acids 122-130 of the **NS1** protein, and unexpectedly the authors obsd. that there was decreased lysis of target cells infected with the A/Texas/36/91 (H1N1) vaccine virus strain compared to the lysis of target cells infected with the prototype A/PR/8/34 (H1N1) virus. RT-PCR results showed that the A/Texas vaccine virus strain contained a quasispecies. Approx. 50% of viral RNA of the **NS1** gene had a nucleotide substitution that resulted in the N K amino acid change at the sixth position of the nonamer peptide. Current influenza vaccines are inactivated and do not contain the **NS1** protein; however, future influenza vaccines may include live attenuated vaccines and with this mutation a live virus would fail to induce a CD8+ **CTL** response to this epitope in individuals with HLA-A2.1, a very common allele, and potentially have reduced efficacy. (c) 1999 Academic Press.
RE.CNT 12
RE
(1) Bertoletti, A; Nature 1994, V369, P407 CAPLUS
(3) Green, S; J Virol 1993, V67, P5962 CAPLUS
(4) Jameson, J; J Virol 1998, V72, P8682 CAPLUS
(7) Klenerman, P; Nature 1994, V369, P403 CAPLUS
(8) Man, S; Int Immunol 1995, V7, P597 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 4 OF 42 CAPLUS COPYRIGHT 2001 ACS
AN 1999:66447 CAPLUS
DN 130:236173
TI Immunization with the N-terminal region of the nonstructural protein **NS1** promotes survival after challenge with lethal influenza A virus dose
AU Tamura, Manabu; Saikh, Kamal U.; Kurane, Ichiro; Ennis, Francis A.
CS Department of Otolaryngology, Osaka University Medical School, Osaka, Japan
SO Viral Immunol. (1998), 11(3), 131-135
CODEN: VIIMET; ISSN: 0882-8245
PB Mary Ann Liebert, Inc.
DT Journal
LA English

TI Immunization with the N-terminal region of the nonstructural protein **NS1** promotes survival after challenge with lethal influenza A virus dose
SO Viral Immunol. (1998), 11(3), 131-135
CODEN: VIIMET; ISSN: 0882-8245
AU Tamura, Manabu; Saikh, Kamal U.; Kurane, Ichiro; Ennis, Francis A.
AB We previously reported that the epitope recognized by an influenza A virus H1, H2, and H3-crossreactive, H-2 Ld-restricted CD8+ cytotoxic T lymphocyte (**CTL**) is located between amino acids 1 and 40 on the nonstructural protein **NS1**. In the present expts., we examd. whether immunization with recombinant vaccinia virus which contained genes coding for amino acids 1-40 of **NS1** (Vac-10) protected mice from lethal challenge with influenza A virus. Mice immunized with this recombinant virus developed influenza A virus-specific cytotoxic activity but not neutralizing antibodies. Challenge with a LD of influenza A virus demonstrated that the first deaths were delayed by 2 days, and the mortality rate was significantly reduced in Vac-10-immunized mice compared with mice immunized with control vaccinia virus. These results suggest that immunization with a single subtype-crossreactive **CTL** epitope on **NS1** can induce protective immunity against lethal influenza A virus infection.
RE.CNT 14
RE
(2) Bennink, J; J Virol 1987, V61, P1098 CAPLUS
(3) Jonjic, S; J Virol 1988, V62, P1653 CAPLUS
(4) Kuwano, K; J Immunol 1988, V140, P1264 CAPLUS
(5) Kuwano, K; Virology 1990, V178, P174 CAPLUS
(7) Reay, P; Virology 1989, V170, P477 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 5 OF 42 CAPLUS COPYRIGHT 2001 ACS
AN 1996:304065 CAPLUS
DN 124:340911
TI Recombinant polyepitope vaccines containing cytotoxic T-lymphocyte epitopes
IN Suhrbier, Andreas; Thomson, Scott Anthony; Khanna, Rajiv; Burrows, Scott Renton; Coupar, Barbara Elizabeth Howieson; Moss, Denis James
PA Council of the Queensland Institute of Medical Research, Australia; Commonwealth Scientific and Industrial Research Organization; University of Melbourne; Walter and Eliza Hall Institute of Medical Research; Biotech Australia Pty. Limited; CSL Limited
SO PCT Int. Appl., 45 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9603144	A1	19960208	WO 1995-AU461	19950727
	W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT				
	RW: KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	CA 2195642	AA	19960208	CA 1995-2195642	19950727
	AU 9530723	A1	19960222	AU 1995-30723	19950727
	EP 769963	A1	19970502	EP 1995-926333	19950727
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				

	CN 1154069	A	19970709	CN 1995-194368	19950727
	JP 10506004	T2	19980616	JP 1995-505321	19950727
	AU 9947459	A1	19991104	AU 1999-47459	19990908
PRAI	AU 1994-7079	19940727			
	AU 1995-1009	19950208			
	AU 1995-30723	19950727			
	WO 1995-AU461	19950727			

TI Recombinant polyepitope vaccines containing cytotoxic T-lymphocyte epitopes
SO PCT Int. Appl., 45 pp.
CODEN: PIXXD2
IN Suhrbier, Andreas; Thomson, Scott Anthony; Khanna, Rajiv; Burrows, Scott Renton; Coupar, Barbara Elizabeth Howieson; Moss, Denis James
AB Vaccines contg. a plurality of recombinant cytotoxic T-lymphocyte (**CTL**) epitopes (i.e. peptides assocd. with specific class I MHC alleles, recognized by **CTL**) comprise .gtoreq.1 recombinant protein including a plurality of **CTL** epitopes from .gtoreq.1 pathogen, wherein the recombinant protein is substantially free of sequences which naturally flank the **CTL** epitopes. In addn., a polynucleotide including .gtoreq.1 sequence encoding a plurality of **CTL** epitopes from .gtoreq.1 pathogens is provided. Thus, a vaccinia virus vector was constructed which coded for a single artificial protein contg. 9 different HLA class I-restricted **CTL** epitopes from Epstein-Barr virus nuclear antigens. HLA-matched peripheral blood mononuclear cells infected with this viral vector were recognized and killed by autologous **CTL** clones specific for each epitope.

L25 ANSWER 6 OF 42 CAPLUS COPYRIGHT 2001 ACS
AN 1995:789020 CAPLUS
DN 123:196210
TI Vaccinia virus serpins B13R and B22R do not inhibit antigen presentation to class I-restricted cytotoxic T lymphocytes
AU Blake, Neil W.; Kettle, Susan; Law, Katherine M.; Gould, Keith; Bastin, Judy; Townsend, Alain R. M.; Smith, Geoffrey L.
CS Sir William Dunn Sch. Pathol., Univ. Oxford, Oxford, OX1 3RE, UK
SO J. Gen. Virol. (1995), 76(9), 2393-98
CODEN: JGVIAY; ISSN: 0022-1317
DT Journal
LA English
TI Vaccinia virus serpins B13R and B22R do not inhibit antigen presentation to class I-restricted cytotoxic T lymphocytes
SO J. Gen. Virol. (1995), 76(9), 2393-98
CODEN: JGVIAY; ISSN: 0022-1317
AU Blake, Neil W.; Kettle, Susan; Law, Katherine M.; Gould, Keith; Bastin, Judy; Townsend, Alain R. M.; Smith, Geoffrey L.
AB Vaccinia virus (VV) inhibits the presentation of certain epitopes from **influenza virus** nucleoprotein (NP), hemagglutinin (HA) and non-structural 1 (**NS1**) proteins to CD8+ cytotoxic T lymphocytes (**CTL**) by an unknown mechanism. The authors have investigated whether VV genes B13R and B22R, which encode proteins with amino acid similarity to serine protease inhibitors (serpins), are involved in this process. Recombinant VVs were constructed which express **influenza virus** proteins HA, NP or **NS1** and which lack serpin gene B13R or both B13R and B22R. The lysis of cells infected with these viruses by **influenza virus** -specific CD8+ **CTL** was compared to the lysis of cells infected with viruses expressing both the influenza proteins and the serpin genes. Cytotoxicity assays showed that deletion of the VV serpin genes B13R and B22R and other genes between B13R and B24R did not increase the level of lysis, indicating that these genes are not involved in inhibition of antigen presentation of the epitopes tested.

L25 ANSWER 7 OF 42 CAPLUS COPYRIGHT 2001 ACS
AN 1995:290080 CAPLUS
DN 122:79113
TI DNA constructs encoding **influenza virus** proteins and

vaccines containing said constructs
IN Donnelly, John J.; Dwarki, Varavani J.; Liu, Margaret A.; Montgomery, Donna L.; Parker, Suezanne E.; Shiver, John W.; Ulmer, Jeffrey B.
PA Merck and Co., Inc., USA; Vical Inc.
SO PCT Int. Appl., 170 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9421797	A1	19940929	WO 1994-US2751	19940314
	W: BB, BG, BR, BY, CN, CZ, FI, HU, KR, KZ, LK, LV, MG, MN, MW, NO, NZ, PL, RO, RU, SD, SI, SK, TT, UA, US, UZ				
	RW: BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	EP 620277	A1	19941019	EP 1994-200605	19940309
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
	BR 9406007	A	19960102	BR 1994-6007	19940314
	CN 1119458	A	19960327	CN 1994-191485	19940314
	HU 73397	A2	19960729	HU 1995-2702	19940314
	PL 178626	B1	20000531	PL 1994-310677	19940314
	CA 2119175	AA	19940919	CA 1994-2119175	19940316
	AU 9457889	A1	19940922	AU 1994-57889	19940317
	AU 676258	B2	19970306		
	ZA 9401885	A	19941026	ZA 1994-1885	19940317
	JP 07095888	A2	19950411	JP 1994-49102	19940318
	JP 10113194	A2	19980506	JP 1997-290137	19940318
	FI 9504329	A	19950914	FI 1995-4329	19950914
	NO 9503649	A	19951117	NO 1995-3649	19950915

PRAI	US 1993-32383	19930318
	US 1993-89985	19930708
	WO 1994-US2751	19940314
	JP 1994-49102	19940318

TI DNA constructs encoding **influenza virus** proteins and vaccines containing said constructs
SO PCT Int. Appl., 170 pp.
CODEN: PIXXD2
IN Donnelly, John J.; Dwarki, Varavani J.; Liu, Margaret A.; Montgomery, Donna L.; Parker, Suezanne E.; Shiver, John W.; Ulmer, Jeffrey B.
AB DNA constructs encoding **influenza virus** gene products, capable of being expressed upon direct introduction, via injection or otherwise, into animal tissues, are novel prophylactic pharmaceuticals which can provide immune protection against infection by homologous and heterologous strains of **influenza virus**. Plasmid DNA encoding human **influenza virus** proteins was injected into the quadriceps of BALB/c mice. This resulted in generation of **influenza virus**-specific cytotoxic lymphocytes (**CTL**'s) and protection from subsequent challenge with a heterologous strain of **influenza virus**, as measured by decreased viral lung titers, inhibition of wt. loss, and increased survival. The antibodies and **CTL**'s and homologous protective immunity generated by DNA injection persisted for over one year. High titer neutralizing antibodies to hemagglutinin and antibodies to nucleoprotein were generated in rhesus monkeys and decreased nasal titers were obsd. following homologous and heterologous challenge in ferrets. Antibodies persisted in the monkeys for at least one year, while **CTL** response and heterologous protection persisted at least 6 mo. A slight decline in degree of heterologous protection occurred but the protection was boostable.

L25 ANSWER 8 OF 42 CAPLUS COPYRIGHT 2001 ACS
AN 1995:212032 CAPLUS
DN 122:7369
TI Influenza A subtype cross-protection after immunization of outbred mice with a purified chimeric **NS1**/HA2 **influenza virus** protein

AU Mbawuike, Innocent N.; Dillon, Susan B.; Demuth, Sandra G.; Jones, Christopher S.; Cate, Thomas R.; Couch, Robert B.
CS Influenza Research Center, Baylor College Medicine, Houston, TX, 77030-3498, USA
SO Vaccine (1994), 12(14), 1340-8
CODEN: VACCDE; ISSN: 0264-410X
DT Journal
LA English
TI Influenza A subtype cross-protection after immunization of outbred mice with a purified chimeric **NS1**/HA2 **influenza virus** protein
SO Vaccine (1994), 12(14), 1340-8
CODEN: VACCDE; ISSN: 0264-410X
AU Mbawuike, Innocent N.; Dillon, Susan B.; Demuth, Sandra G.; Jones, Christopher S.; Cate, Thomas R.; Couch, Robert B.
AB Influenza A/PR/8/34-derived chimeric (D) protein (SK&F 106160) composed of the first 81 amino acids (aa) of **NS1** fused to the conserved 157 C-terminal aa of HA2 (NS11-81-HA265-222) was previously shown to induce H-2d-restricted protective cytotoxic T-lymphocyte (**CTL**) immunity in inbred mice. However, D protein, like other small peptides, exhibited haplotype dependence and was not immunogenic in H-2b and H-2K mice. A potential use of this antigen in humans and the role of T cells in any protection were evaluated in outbred Swiss and inbred CBF6F1 (H-2d/b) mice. Mice immunized with D protein and challenged by small-particle aerosol with a LD of **influenza virus** were significantly protected against mortality from influenza A/H1N1 and A/H2N2, but not from A/H3N2 and influenza B viruses when compared with control mice. D protein did not induce serum virus-neutralizing antibody but caused virus to be cleared faster in immunized mice. Protection was long-lasting. In vivo depletion of either Lyt2 (CD8+) or L3T4 (CD4+) T cells with monoclonal antibodies led to abrogation of in vitro-generated **CTL** activity in CF6F1 mice and significant redn. in the protective efficacy of D protein against virus challenge in both Swiss and CF6F1 mice. These results suggest that protection was mediated by CD8+ and/or CD4+ cells and not antibody. Thus, D protein, via a conserved sequence on the HA2 polypeptide, has the potential to induce partially cross-reactive **CTL** that may protect against **influenza virus** disease in humans.

L25 ANSWER 9 OF 42 CAPLUS COPYRIGHT 2001 ACS
AN 1994:407304 CAPLUS
DN 121:7304
TI Recombinant **influenza virus** vaccine compositions
IN Dillon, Susan B.; Jones, Christopher S.; Scott, Miller O.; Shatzman, Allan
PA SmithKline Beecham Corp., USA
SO PCT Int. Appl., 58 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9406468	A1	19940331	WO 1992-US7312	19920917

W: AU, CA, JP, KR, US
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, SE
PRAI US 1991-751898 19910830
TI Recombinant **influenza virus** vaccine compositions
SO PCT Int. Appl., 58 pp.
CODEN: PIXXD2
IN Dillon, Susan B.; Jones, Christopher S.; Scott, Miller O.; Shatzman, Allan
AB A novel vaccine against various subtypes of influenza A is comprised of HA266-222 and, optionally, its N-terminal sequence Met-Leu-Ser-Thr-Arg-

Ser. Plasmid pH1HA266-222 contg. the **NS1** gene and the gene for HA266-222 of **influenza virus** A/PR/8/34 was prepd. and used for the expression in Escherichia coli. Induction by the highly purified HA266-222 of protective class I MHC-restricted cytotoxic T-lymphocyte (**CTL**) and immunity from lethal virus challenge of was demonstrated in mice. The protection effects in human of a vaccine prepn. contg. Al2O3 and HA266-222 or NS11-81HA266-222 were also shown, in which a neutralizing antibody was not detected.

L25 ANSWER 10 OF 42 CAPLUS COPYRIGHT 2001 ACS
AN 1993:166962 CAPLUS
DN 118:166962
TI Precise prediction of a Kk-restricted cytotoxic T cell epitope in the **NS1** protein of **influenza virus** using an MHC allele-specific motif
AU Cossins, Judy; Gould, Keith G.; Smith, Mike; Driscoll, Paul; Brownlee, George G.
CS Sir William Dunn Sch. Pathol., Univ. Oxford, Oxford, OX1 3RE, UK
SO Virology (1993), 193(1), 289-95
CODEN: VIRLAX; ISSN: 0042-6822
DT Journal
LA English
TI Precise prediction of a Kk-restricted cytotoxic T cell epitope in the **NS1** protein of **influenza virus** using an MHC allele-specific motif
SO Virology (1993), 193(1), 289-95
CODEN: VIRLAX; ISSN: 0042-6822
AU Cossins, Judy; Gould, Keith G.; Smith, Mike; Driscoll, Paul; Brownlee, George G.
AB The nonstructural protein **NS1** of influenza A/PR/8/34 virus has previously been reported to be recognized by murine Kk-restricted cytotoxic T lymphocytes (**CTL**), although the sequence of the epitope was not defined. A Kk-specific motif has previously been published and consists of a glutamic acid or (less frequently) an aspartic acid at position 2 and an isoleucine at the carboxyl terminus of a peptide 8 or 9 residues long. This motif was used to predict the sequence of the **NS1** epitope, which was defined as a nonapeptide corresponding to amino acid residues 152-160, sequence EEGAIVGEI. This is the first **CTL** epitope to be defined within the **NS1** protein of the influenza A virus. A model of how this epitope could bind to the Kk mol. was produced by homol. modeling from an X-ray crystal structure of a human HLA/peptide complex.

L25 ANSWER 11 OF 42 CAPLUS COPYRIGHT 2001 ACS
AN 1992:212837 CAPLUS
DN 116:212837
TI Cross-reactive influenza A subtype immunization method and vaccine composition
IN Ennis, Francis A.
PA University of Massachusetts Medical Center, USA
SO PCT Int. Appl., 32 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9202250	A1	19920220	WO 1991-US5623	19910807
	W: AT, AU, BB, BG, BR, CA, CH, CS, DE, DK, ES, FI, GB, HU, JP, KP, KR, LK, LU, MC, MG, MW, NL, NO, PL, RO, SD, SE, SU				
	RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FR, GA, GB, GN, GR, IT, LU, ML, MR, NL, SE, SN, TD, TG				
	CA 2090005	AA	19920209	CA 1991-2090005	19910807

	AU 9185011	A1	19920302	AU 1991-85011	19910807
	EP 542895	A1	19930526	EP 1991-915798	19910807
	EP 542895	B1	19961120		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	EP 711564	A1	19960515	EP 1995-117311	19910807
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	AT 145335	E	19961215	AT 1991-915798	19910807
	ES 2094233	T3	19970116	ES 1991-915798	19910807
	US 5766601	A	19980616	US 1995-419513	19950407
	US 5674502	A	19971007	US 1995-462963	19950605
	US 5882650	A	19990316	US 1997-910182	19970813
PRAI	US 1990-564714	19900808			
	EP 1991-915798	19910807			
	WO 1991-US5623	19910807			
	US 1993-42884	19930405			
	US 1995-419513	19950407			

TI Cross-reactive influenza A subtype immunization method and vaccine composition

SO PCT Int. Appl., 32 pp.
CODEN: PIXXD2

IN Ennis, Francis A.

AB Methods and vaccine compns. are provided for stimulating in an individual an influenza A virus protective response which is subtype cross-protective. Influenza A virus **NS1** protein, or a T-cell epitope thereof, is administered to the individual in an amt. sufficient to stimulate the virus protective response. A cytotoxic T-lymphocyte (**CTL**) clone (A-11) is described which recognized the **NS1** protein on influenza A virus-infected cells. Recognition by **CTL** clone A-11 of **NS1** on A/PR/8 virus infected target cells was shown to be restricted by the H-2Ld allele. Adoptive transfer of **NS1**-specific **CTL** clone A-11 reduced pulmonary virus titers in mice infected with A/PR/8, A/JAP, or A/PC viruses.

L25 ANSWER 12 OF 42 CAPLUS COPYRIGHT 2001 ACS

AN 1991:447375 CAPLUS

DN 115:47375

TI Recognition of disparate HA and **NS1** peptides by an H-2Kd-restricted, influenza specific **CTL** clone

AU Kuwano, Koichi; Reyes, Victor E.; Humphreys, Robert E.; Ennis, Francis A.

CS Med. Sch., Univ. Massachusetts, Worcester, MA, 01655, USA

SO Mol. Immunol. (1991), 28(1-2), 1-7
CODEN: MOIMD5; ISSN: 0161-5890

DT Journal

LA English

TI Recognition of disparate HA and **NS1** peptides by an H-2Kd-restricted, influenza specific **CTL** clone

SO Mol. Immunol. (1991), 28(1-2), 1-7
CODEN: MOIMD5; ISSN: 0161-5890

AU Kuwano, Koichi; Reyes, Victor E.; Humphreys, Robert E.; Ennis, Francis A.

AB **CTLs** (CD8+) are known to recognize exogenous peptide in the context of class I MHC mols. An influenza subtype H1 and H2 cross-reactive **CTL** clone B7, which was stimulated by a fusion protein contg. a portion of HA2 subunit of A/PR/8 virus HA, recognized a synthetic peptide (residues 515-526) of the HA2 subunit of A/PR/8 virus strain. This **CTL** clone also recognized a structurally disparate **NS1** peptide 50-68 of the same A/PR/8 virus. The authors examd. the recognition of the **NS1** peptide 50-68 and the HA peptide 515-526 by the subcloned **CTL** clone, B7-B7. Cold target inhibition expts. showed that the recognition of the HA peptide by the **CTL** clone B7-B7 could be competed by **NS1** peptide-treated target cells and vice versa. The recognition of both **NS1** peptide and HA peptide by the **CTL** clone B7-B7 was restricted by the same allele, H2Kd. In addn., this **NS1** peptide requires approx. a 600-fold higher concn. for optimal **CTL** recognition than did the HA peptide. Apparently, the TCR on clone B7-B7 recognizes the HA peptide or the **NS1** peptide as comparable complexes with

the same class I MHC mols., although there is no obvious homol. in the primary sequences of HA 515-526 and **NS1** 50-68 peptides.

[illegible]

AN 1990:530499 CAPLUS

[illegible]

NS1-specific **CTL** clone
AU Kuwano, Koichi; Tamura, Manabu; Ennis, Francis A.
CS Med. Sch., Univ. Massachusetts, Worcester, MA, 01655, USA
SO Virology (1990), 178(1), 174-9
CODEN: VIRLAX; ISSN: 0042-6822
DT Journal
LA English
TI Cross-reactive protection against influenza A virus infections by an **NS1**-specific **CTL** clone
SO Virology (1990), 178(1), 174-9
CODEN: VIRLAX; ISSN: 0042-6822
AU Kuwano, Koichi; Tamura, Manabu; Ennis, Francis A.
AB An influenza A subtype cross-reactive **CTL** clone (A-11) was established following stimulation of A/PR/8 virus-immune spleen cells of Balb/C (H-2d) mice. This T cell clone lysed target cells infected with **influenza viruses** of the H1, H2, or H3 subtypes, and recognizes a conserved epitope on the **NS1** protein. The clone is restricted by the H-2Ld allele. Adoptive transfer of A-11 significantly reduced virus titers in the lungs of mice infected with influenza A viruses of the H1, H2, or H3 subtypes. These results suggest that the conserved epitope on HS1 which is recognized by A-11 may be a useful component to consider for inclusion in exptl. cross-reactive influenza vaccines.

L25 ANSWER 14 OF 42 CAPLUS COPYRIGHT 2001 ACS
AN 1990:74894 CAPLUS
DN 112:74894
TI Cytotoxic T lymphocytes recognize a cross-reactive epitope on the transmembrane region of influenza H1 and H2 hemagglutinins
AU Kuwano, Koichi; Braciale, Thomas J.; Ennis, Francis A.
CS Med. Sch., Univ. Massachusetts, Worcester, MA, USA
SO Viral Immunol. (1989), 2(3), 163-73
CODEN: VIIMET; ISSN: 0882-8245
DT Journal
LA English
TI Cytotoxic T lymphocytes recognize a cross-reactive epitope on the transmembrane region of influenza H1 and H2 hemagglutinins
SO Viral Immunol. (1989), 2(3), 163-73
CODEN: VIIMET; ISSN: 0882-8245
AU Kuwano, Koichi; Braciale, Thomas J.; Ennis, Francis A.
AB A cross-reactive cytotoxic T lymphocyte clone was produced by stimulation with a hybrid protein that contained a portion of the **NS1** and the HA2 subunit of A/PR/8/34 (H1N1) virus. Transfer of this clone clears virus from the lungs of mice challenged with H1 or H2 viruses. In these expts., the protective **CTL** epitope is localized to the transmembrane portion of the influenza A virus hemagglutinin which is well-conserved on H1 and H2 subtype viruses. The H1 and H2 cross-reactive **CTL** clone recognized a synthetic peptide of 23 amino acids (anchor peptide) corresponding to the transmembrane domain of the A/PR/8 (H1) HA as well as the comparable anchor peptide of the A/JAP (H2) HA. The anchor peptide of the A/PR/8 HA competed against the anchor peptide of A/JAP HA in cold target inhibition tests. These results indicate that the epitope recognized by the cross-reactive **CTL** is located on the transmembrane region of both A/PR/8 HA and A/JAP HA. Synthetic peptides

were prepd. to define the epitope within the transmembrane region of A/PR/8 HA which is recognized by a cross reactive **CTL** clone. The results indicate that residues 518-528 in the transmembrane region of A/PR/8 HA contain the cross-reactive **CTL** epitope.

L25 ANSWER 15 OF 42 CAPLUS COPYRIGHT 2001 ACS
AN 1987:437705 CAPLUS
DN 107:37705
TI Potential for cross-reactive protection using peptides and adjuvants or carrier molecules
AU Ennis, Francis A.
CS Med. Sch., Univ. Massachusetts, Worcester, MA, USA
SO Report (1986), Order No. AD-A173164/5/GAR, 3 pp. Avail.: NTIS From: Gov. Rep. Announce. Index (U. S.) 1987, 87(3), Abstr. No. 704,607
DT Report
LA English
TI Potential for cross-reactive protection using peptides and adjuvants or carrier molecules
SO Report (1986), Order No. AD-A173164/5/GAR, 3 pp. Avail.: NTIS From: Gov. Rep. Announce. Index (U. S.) 1987, 87(3), Abstr. No. 704,607
AU Ennis, Francis A.
AB It was previously reported that an **influenza virus** -specific polypeptide produced in Escherichai coli induced **influenza virus**-subtype-specific memory and secondary H-2 restricted cytotoxic T-lymphocyte (**CTL**) responses in mice. The c13 protein is a hybrid protein of the first 81 amino acids of the **NS1** viral nonstructural protein and the HA2 subunit of the viral hemagglutinin. Here it is shown that target cells exposed to c13 protein are lysed by virus-immune **CTL** in a subtype-specific H-2 restricted manner. This suggests that this protein interacts with target cell membranes and is presented on the cell membrane in proper confirmation with H-2 antigens of recognization by the **influenza virus**-specific **CTL**. Further, immunization with this mol. results in the induction of virus-specific **CTL**, which are protective, and this peptide induces **CTL** without the need for adjuvants.

L25 ANSWER 16 OF 42 CAPLUS COPYRIGHT 2001 ACS
AN 1985:521291 CAPLUS
DN 103:121291
TI **Influenza virus** hemagglutinin-specific cytotoxic T cell response induced by polypeptide produced in Escherichia coli
AU Yamada, Akio; Ziese, Marsha R.; Young, James F.; Yamada, Yasuko K.; Ennis, Francis A.
CS Med. Sch., Univ. Massachusetts, Worcester, MA, 01605, USA
SO J. Exp. Med. (1985), 162(2), 663-74
CODEN: JEMEAV; ISSN: 0022-1007
DT Journal
LA English
TI **Influenza virus** hemagglutinin-specific cytotoxic T cell response induced by polypeptide produced in Escherichia coli
SO J. Exp. Med. (1985), 162(2), 663-74
CODEN: JEMEAV; ISSN: 0022-1007
AU Yamada, Akio; Ziese, Marsha R.; Young, James F.; Yamada, Yasuko K.; Ennis, Francis A.
AB The authors tested the abilities of various polypeptides of A/PR/8/34 (H1N1) virus, constructed by recombinant DNA techniques, to induce **influenza virus**-specific secondary cytotoxic T lymphocyte (**CTL**) responses. A hybrid protein (c13 protein), consisting of the first 81 amino acids of viral nonstructural protein (**NS1**) and the HA2 subunit of viral hemagglutinin (HA), induced H-2-restricted, **influenza virus** subtype-specific secondary **CTLs** in vitro, although other peptides did not. Using a recombinant virus, the viral determinant responsible for recognition was

CTL precursor frequencies of A/PR/8/34 virus- and c13 protein-immune mice were estd. as 1 in 8047 and 50,312, resp. Thus, c13 protein recipient mice, even though the level of precursor frequency was below that obsd. in virus-immune mice.

L25 ANSWER 17 OF 42 MEDLINE
AN 1999294898 MEDLINE
DN 99294898
TI High-yield reassortant influenza vaccine production virus has a mutation at an HLA-A 2.1-restricted CD8+ **CTL** epitope on the **NS1** protein.
AU Terajima M; Jameson J; Norman J E; Cruz J; Ennis F A
CS Center for Infectious Disease and Vaccine Research, University of Massachusetts Medical School, Worcester, Massachusetts 01655, USA.
SO VIROLOGY, (1999 Jun 20) 259 (1) 135-40.
Journal code: XEA. ISSN: 0042-6822.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals; Cancer Journals
EM 199909
EW 19990905
TI High-yield reassortant influenza vaccine production virus has a mutation at an HLA-A 2.1-restricted CD8+ **CTL** epitope on the **NS1** protein.
SO VIROLOGY, (1999 Jun 20) 259 (1) 135-40.
Journal code: XEA. ISSN: 0042-6822.
AU Terajima M; Jameson J; Norman J E; Cruz J; Ennis F A
AB Current **influenza virus** vaccines are prepared using high-yield reassortant virus strains obtained from a mixed infection of the new virus strain and a prototype high-yielding virus strain. The high-titered reassortant virus strain used as vaccine seed virus possesses the recent virus HA and NA and contains the internal genes from the high-growing prototype parent. We established a human CD8(+) cytotoxic T cell (**CTL**) line, 10-2C2, which recognizes an HLA-A2.1-restricted influenza A virus H1, H2, H3 cross-reactive T cell epitope on amino acids 122-130 of the **NS1** protein, and unexpectedly we observed that there was decreased lysis of target cells infected with the A/Texas/36/91 (H1N1) vaccine virus strain compared to the lysis of target cells infected with the prototype A/PR/8/34 (H1N1) virus. RT-PCR results showed that the A/Texas vaccine virus strain contained a quasispecies. Approximately 50% of viral RNA of the **NS1** gene had a nucleotide substitution that resulted in the N --> K amino acid change at the sixth position of the nonamer peptide. Current influenza vaccines are inactivated and do not contain the **NS1** protein; however, future influenza vaccines may include live attenuated vaccines and with this mutation a live virus would fail to induce a CD8(+) **CTL** response to this epitope in individuals with HLA-A2.1, a very common allele, and potentially have reduced efficacy. Copyright 1999 Academic Press.

L25 ANSWER 18 OF 42 MEDLINE
AN 1999114963 MEDLINE
DN 99114963
TI Immunization with the N-terminal region of the nonstructural protein **NS1** promotes survival after challenge with lethal influenza A virus dose.
AU Tamura M; Saikh K U; Kurane I; Ennis F A
CS Department of Otolaryngology, Osaka University Medical School, Japan.
NC 1R01-AI29378 (NIAID)
5T32 AI 107272 (NIAID)
SO VIRAL IMMUNOLOGY, (1998) 11 (3) 131-5.

Journal code: AD0. ISSN: 0882-8245.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199906
TI Immunization with the N-terminal region of the nonstructural protein **NS1** promotes survival after challenge with lethal influenza A virus dose.
SO VIRAL IMMUNOLOGY, (1998) 11 (3) 131-5.
Journal code: AD0. ISSN: 0882-8245.
AU Tamura M; Saikh K U; Kurane I; Ennis F A
AB We previously reported that the epitope recognized by an influenza A virus H1, H2, and H3-crossreactive, H-2 Ld-restricted CD8+ cytotoxic T lymphocyte (**CTL**) is located between amino acids 1 and 40 on the nonstructural protein **NS1**. In the present experiments, we examined whether immunization with recombinant vaccinia virus which contained genes coding for amino acids 1-40 of **NS1** (Vac-10) protected mice from lethal challenge with influenza A virus. Mice immunized with this recombinant virus developed influenza A virus-specific cytotoxic activity but not neutralizing antibodies. Challenge with a lethal dose of influenza A virus demonstrated that the first deaths were delayed by 2 days, and the mortality rate was significantly reduced ($p < 0.05$) in Vac-10-immunized mice compared with mice immunized with control vaccinia virus. These results suggest that immunization with a single subtype-crossreactive **CTL** epitope on **NS1** can induce protective immunity against lethal influenza A virus infection.

L25 ANSWER 19 OF 42 MEDLINE
AN 1998222157 MEDLINE
DN 98222157
TI The distinctive features of **influenza virus** infection of dendritic cells.
AU Bender A; Albert M; Reddy A; Feldman M; Sauter B; Kaplan G; Hellman W; Bhardwaj N
CS University of Erlangen, Germany.
NC AR-42557 (NIAMS)
AI-39516 (NIAID)
AI-22616 (NIAID)
SO IMMUNOBIOLOGY, (1998 Mar) 198 (5) 552-67.
Journal code: GH3. ISSN: 0171-2985.
CY GERMANY: Germany, Federal Republic of
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199808
EW 19980801
TI The distinctive features of **influenza virus** infection of dendritic cells.
SO IMMUNOBIOLOGY, (1998 Mar) 198 (5) 552-67.
Journal code: GH3. ISSN: 0171-2985.
AU Bender A; Albert M; Reddy A; Feldman M; Sauter B; Kaplan G; Hellman W; Bhardwaj N
AB CD8+ cytolytic T lymphocytes (**CTLs**) are considered to be critical mediators for resistance to **influenza virus** infection. We have previously demonstrated that dendritic cells are potent antigen presenting cells in the development of anti-influenza **CTLs**. Here we identify distinctive features of the interaction of **influenza virus** with dendritic cells. Exposure of dendritic cells to **influenza virus** at MOIs of 2-4:1 leads to > 90% infection, as manifested by the expression of the viral proteins HA and **NS1**. The infection is non-toxic as viral protein expression is sustained for > 2 days with retention of viability, but

little infectious virus is produced. Substantial induction of the anti-viral cytokine IFN-alpha also occurs. Influenza infection of macrophages also results in viral protein expression in a majority of cells, and synthesis of IFN-alpha. In contrast to dendritic cells, macrophages display evidence of apoptosis within 10-12 hours, and the majority of cells die within 24-36 hours. During this interval macrophages synthesize > 10-fold higher levels of virus than dendritic cells. Infected dendritic cells but not macrophages, can induce substantial **CTL** responses from purified blood CD8+ T cells in the absence of exogenous cytokines such as IL-2. Low levels of infection (MOIs of 0.02) are sufficient to generate potent **CTL** responses. **Influenza virus** expressing non-cleaved HA does not elicit **CTLs** indicating that virus must access the cytoplasm of dendritic cells to utilize traditional class I processing pathways. These observations indicate that DCs are distinct in their handling of **influenza**

L25 ANSWER 42 OF 42 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1985:426426 BIOSIS
DN BA80:96418
TI **INFLUENZA VIRUS** HEMAGGLUTININ-SPECIFIC CYTOTOXIC T CELL RESPONSE INDUCED BY POLYPEPTIDE PRODUCED IN ESCHERICHIA-COLI.
AU YAMADA A; ZIESE M R; YOUNG J F; YAMADA Y K; ENNIS F A
CS DIV. INFECTIOUS DISEAES, DEP. MED., UNIV. MASS. MED. SCH., WORCESTER, MASS. 01605.
SO J EXP MED, (1985) 162 (2), 663-674.
CODEN: JEMEAV. ISSN: 0022-1007.
FS BA; OLD
LA English
TI **INFLUENZA VIRUS** HEMAGGLUTININ-SPECIFIC CYTOTOXIC T CELL RESPONSE INDUCED BY POLYPEPTIDE PRODUCED IN ESCHERICHIA-COLI.
SO J EXP MED, (1985) 162 (2), 663-674.
CODEN: JEMEAV. ISSN: 0022-1007.
AU YAMADA A; ZIESE M R; YOUNG J F; YAMADA Y K; ENNIS F A
AB The abilities of various polypeptides of A/PR/8/34 (H1N1) virus, constructed by recombinant DNA techniques, to induce **influenza virus**-specific secondary cytotoxic T lymphocyte (**CTL**) responses was tested. A hybrid protein (c13 protein), consisting of the 1st 81 amino acids of viral nonstructural protein (**NS1**) and the HA2 subunit of viral hemagglutinin (HA), induced H-2-restricted, **influenza virus** subtype-specific secondary **CTL** in vitro, although other peptides did not. Using a recombinant virus, the viral determinant responsible for recognition was mapped to the HA2 portion of c13 protein. Immunization of mice with c13 protein induced the generation of memory **CTL** in vivo. The **CTL** precursor frequencies of A/PR/8/34 virus- and c13 protein-immune mice were estimated as 1 in 8047 and 50,312, respectively. The c13 protein apparently primed recipient mice, even though the level of precursor frequency was below that observed in virus-immune mice.

L25 ANSWER 39 OF 42 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1990:27805 BIOSIS
DN BA89:14771
TI CYTOTOXIC T LYMPHOCYTES RECOGNIZE A CROSS-REACTIVE EPITOPE ON THE TRANSMEMBRANE REGION OF INFLUENZA H1 AND H2 HEMAGGLUTININS.
AU KUWANO K; BRACIALE T J; ENNIS F A
CS DIV. INFECT. DIS., DEP. MED., UNIV. MASS. MED. SCH., 55 LAKE AVE. NORTH, WORCESTER, MASS. 01655, USA.
SO VIRAL IMMUNOL, (1989) 2 (3), 163-174.
CODEN: VIIMET. ISSN: 0882-8245.
FS BA; OLD
LA English
TI CYTOTOXIC T LYMPHOCYTES RECOGNIZE A CROSS-REACTIVE EPITOPE ON THE TRANSMEMBRANE REGION OF INFLUENZA H1 AND H2 HEMAGGLUTININS.
SO VIRAL IMMUNOL, (1989) 2 (3), 163-174.
CODEN: VIIMET. ISSN: 0882-8245.
AU KUWANO K; BRACIALE T J; ENNIS F A
AB A cross-reactive cytotoxic T lymphoctye clone was produced by stimulation with a hybrid protein that contained a portion of the **NS1** and the HA2 subunit of A/PR/8/34 (H1N1) virus. Transfer of this clone clears virus from the lungs of mice challenged with H1 or H2 viruses. In these experiments we define the location of the protective **CTL** epitope to the transmembrane portion of the influenza A virus hemagglutinin which is well-conserved on H1 and H2 subtype viruses. The H1 and H2 cross-reactive **CTL** clone recognized a synthetic peptide of 23 amino acids (anchor peptide) corresponding to the transmembrane domain of the A/PR/8 (H1) HA as well as the comparable anchor peptide of the A/JAP (H2) HA. The anchor peptide of the A/PR/8 HA competed against the anchor peptide of A/JAP HA in cold target inhibition tests. These results indicate that the epitope recognized by the cross-reactive **CTL** is located on the transmembrane region of both A/PR/8 HA and A/JAP HA. We prepared synthetic peptides to define the epitope within the transmembrane region of A/PR/8 which is recognized by a crossreactive **CTL** clone. The results indicate that residues 518-528 in the transmembrane region of A/PR/8 HA contain the cross-reactive **CTL** epitope.

L25 ANSWER 38 OF 42 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1990:471878 BIOSIS
DN BA90:111298
TI CROSS-REACTIVE PROTECTION AGAINST INFLUENZA A VIRUS INFECTIONS BY AN **NS1**-SPECIFIC **CTL** CLONE.
AU KUWANO K; TAMURA M; ENNIS F A
CS DIV. INFECTIOUS DIS., DEP. MED., UNIV. MASSACHUSETTS MED. SCH., WORCESTER, MASSACHUSETTS 01655.
SO VIROLOGY, (1990) 178 (1), 174-179.
CODEN: VIRLAX. ISSN: 0042-6822.
FS BA; OLD
LA English
TI CROSS-REACTIVE PROTECTION AGAINST INFLUENZA A VIRUS INFECTIONS BY AN **NS1**-SPECIFIC **CTL** CLONE.
SO VIROLOGY, (1990) 178 (1), 174-179.
CODEN: VIRLAX. ISSN: 0042-6822.
AU KUWANO K; TAMURA M; ENNIS F A
AB An influenza A subtype cross-reactive **CTL** clone (A-11) was established following stimulation of A/PR/8 virus-immune spleen cells of Balb/C (H-2d) mice. This T cell clone lysed target cells infected with **influenza viruses** of the H1, H2, or H3 subtypes, and recognizes a conserved epitope on the **NS1** protein. The clone is restricted by the H-2Ld allele. Adoptive transfer of A-11 significantly reduced virus titers in the lungs of mice infected with influenza A viruses of the H1, H2, or H3 subtypes. These results suggest that the conserved epitope on **NS1** which is recognized by A-11 may be a useful component to consider for inclusion in experimental cross-reactive influenza vaccines.

L25 ANSWER 38 OF 42 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1990:471878 BIOSIS
DN BA90:111298
TI CROSS-REACTIVE PROTECTION AGAINST INFLUENZA A VIRUS INFECTIONS BY AN **NS1**-SPECIFIC **CTL** CLONE.
AU KUWANO K; TAMURA M; ENNIS F A
CS DIV. INFECTIOUS DIS., DEP. MED., UNIV. MASSACHUSETTS MED. SCH., WORCESTER,
MASSACHUSETTS 01655.
SO VIROLOGY, (1990) 178 (1), 174-179.
CODEN: VIRLAX. ISSN: 0042-6822.
FS BA; OLD
LA English
TI CROSS-REACTIVE PROTECTION AGAINST INFLUENZA A VIRUS INFECTIONS BY AN **NS1**-SPECIFIC **CTL** CLONE.
SO VIROLOGY, (1990) 178 (1), 174-179.
CODEN: VIRLAX. ISSN: 0042-6822.
AU KUWANO K; TAMURA M; ENNIS F A
AB An influenza A subtype cross-reactive **CTL** clone (A-11) was established following stimulation of A/PR/8 virus-immune spleen cells of Balb/C (H-2d) mice. This T cell clone lysed target cells infected with **influenza viruses** of the H1, H2, or H3 subtypes, and recognizes a conserved epitope on the **NS1** protein. The clone is restricted by the H-2Ld allele. Adoptive transfer of A-11 significantly reduced virus titers in the lungs of mice infected with influenza A viruses of the H1, H2, or H3 subtypes. These results suggest that the conserved epitope on **NS1** which is recognized by A-11 may be a useful component to consider for inclusion in experimental cross-reactive influen

L25 ANSWER 37 OF 42 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1992:280459 BIOSIS
DN BA94:5109
TI INDUCTION OF PROTECTIVE CLASS I MHC-RESTRICTED **CTL** IN MICE BY A RECOMBINANT INFLUENZA VACCINE IN ALUMINIUM HYDROXIDE ADJUVANT.
AU DILLON S B; DEMUTH S G; SCHNEIDER M A; WESTON C B; JONES C S; YOUNG J F; SCOTT M; BHATNAGHAR P K; LOCASTRO S; HANNA N
CS DEP. ANTI-INFECTIVES, SMITH-KLINE BEECHAM PHARM., MAIL CODE L101, P.O. BOX 1539, KING OF PRUSSIA, PA. 19406.
SO VACCINE, (1992) 10 (5), 309-318.
CODEN: VACCDE. ISSN: 0264-410X.
FS BA; OLD
LA English
TI INDUCTION OF PROTECTIVE CLASS I MHC-RESTRICTED **CTL** IN MICE BY A RECOMBINANT INFLUENZA VACCINE IN ALUMINIUM HYDROXIDE ADJUVANT.
SO VACCINE, (1992) 10 (5), 309-318.
CODEN: VACCDE. ISSN: 0264-410X.
AU DILLON S B; DEMUTH S G; SCHNEIDER M A; WESTON C B; JONES C S; YOUNG J F; SCOTT M; BHATNAGHAR P K; LOCASTRO S; HANNA N
AB Induction of class I MHC-restricted cytotoxic T lymphocyte (**CTL**) responses by soluble proteins or peptides requires complex adjuvants or carrier systems which are not licensed for use with human vaccines. The data presented in this report show that vaccination with a highly purified recombinant influenza protein antigen in aluminium hydroxide adjuvant, the only adjuvant currently licensed for clinical use, elicited class I restricted **CTL** and protection from lethal challenge with H1N1 and H2N2 viruses. The antigen (D protein, SK&F 106160) is produced by expression of H1N1 **influenza virus**-derived cDNA (strain A/PR/8/34) in Escherichia coli, and is composed of the first 81 N-terminal amino acids (aa) of the non-structural protein 1 (**NS1**) fused via a nine nucleotide non-viral linker sequence to the 157 C-terminal aa of the haemagglutinin 2 subunit (HA2). Previous work by Kuwano et al1 demonstrated that in vitro stimulation of spleen cells from **influenza virus**-primed mice, with a partially purified preparation of the D protein, selected for CD8+ **CTL** clones which facilitated lung clearance of H1N1 and H2N2 viruses. In the current study, these results were extended by studying the responses of mice actively immunized with highly purified D protein in the presence or absence of adjuvants. Vaccination of CB6F1 (H-2d.times.b) mice with D protein in aluminium hydroxide or Freund's complete adjuvant generated H1N1 cross-reactive, H-2d-restricted, CD8+ **CTL** directed against an immunodominant HA2 epitope (aa 189-199). D protein without adjuvant did not elicit **CTL**, regardless of the route of injection. However, long-lived (> 6 months) splenic memory **CTL** were elicited by boosting mice intraperitoneally (i.p.) with the D protein in the absence of adjuvant. In mice injected subcutaneously with D protein in aluminium hydroxide at weeks 0 and 3, survival was increased relative to controls up to 16 weeks beyond the second vaccination, after which time additional boosting was required for protection. Studies in H-2b and H-2k mice vaccinated with the D protein showed that induction of CD4+ T-cell or antibody responses, in the absence of CD8+ **CTL**, did not correlate with protection. Passive transfer of immune sera from CB6F1 mice was also not protective. This prototype H1N1 recombinant subunit vaccine in aluminium adjuvant should directly address the feasibility of achieving

a protective cell-mediated immune response in human influenza.

L25 ANSWER 25 OF 42 MEDLINE
AN 93174937 MEDLINE
DN 93174937
TI Precise prediction of a Kk-restricted cytotoxic T cell epitope in the **NS1** protein of **influenza virus** using an MHC allele-specific motif.
AU Cossins J; Gould K G; Smith M; Driscoll P; Brownlee G G
CS Sir William Dunn School of Pathology, University of Oxford, United Kingdom.
SO VIROLOGY, (1993 Mar) 193 (1) 289-95.
Journal code: XEA. ISSN: 0042-6822.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals; Cancer Journals
EM 199305
TI Precise prediction of a Kk-restricted cytotoxic T cell epitope in the **NS1** protein of **influenza virus** using an MHC allele-specific motif.
SO VIROLOGY, (1993 Mar) 193 (1) 289-95.
Journal code: XEA. ISSN: 0042-6822.
AU Cossins J; Gould K G; Smith M; Driscoll P; Brownlee G G
AB The nonstructural protein **NS1** of influenza A/PR/8/34 virus has previously been reported to be recognized by murine Kk-restricted cytotoxic T lymphocytes (**CTL**), although the sequence of the epitope was not defined. A Kk-specific motif has previously been published and consists of a glutamic acid or (less frequently) an aspartic acid at position 2 and an isoleucine at the carboxyl terminus of a peptide eight or nine residues long. This motif was used here to predict the sequence of the **NS1** epitope, which was defined as a nonapeptide corresponding to amino acid residues 152-160, sequence EEGAIVGEI. This is the first **CTL** epitope to be defined within the **NS1** protein of the influenza A virus. A model of how this epitope could bind to the Kk molecule was produced by homology modelling from an X-ray crystal structure of a human HLA/peptide complex.

L25 ANSWER 23 OF 42 MEDLINE
AN 94220225 MEDLINE
DN 94220225
TI Protective cross-reactive epitope on the nonstructural protein **NS1** of influenza A virus.
AU Saikh K U; Tamura M; Kuwano K; Dai L C; West K; Ennis F A
CS Department of Medicine, University of Massachusetts Medical School, Worcester.
NC 1R01-AI29378 (NIAID)
5T32 AI 107272 (NIAID)
SO VIRAL IMMUNOLOGY, (1993 Winter) 6 (4) 229-36.
Journal code: AD0. ISSN: 0882-8245.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199408
TI Protective cross-reactive epitope on the nonstructural protein **NS1** of influenza A virus.
SO VIRAL IMMUNOLOGY, (1993 Winter) 6 (4) 229-36.
Journal code: AD0. ISSN: 0882-8245.
AU Saikh K U; Tamura M; Kuwano K; Dai L C; West K; Ennis F A
AB We reported previously that adoptive immunization with an influenza A virus **NS1**-specific H-2Ld-restricted, cross-reactive, **CTL** clone A-11 established by stimulation with A/PR/8/34 virus (H1N1) reduced lung virus titers in mice challenged with virus in vivo (Virology 178:174-179, 1990). Using a set of recombinant vaccinia virus constructs containing truncated portions of the NS gene we have localized this cross-protective **CTL** epitope to the N-terminal region of the **NS1** protein. This region of **NS1** is active in inducing CD8+ **CTL** in vivo because virus-stimulated BALB/c immune spleen cells in bulk cultures also recognized the N-terminal region of the **NS1** protein.

L25 ANSWER 20 OF 42 MEDLINE
AN 96031357 MEDLINE
DN 96031357
TI Definition of a human T cell epitope from influenza A non-structural protein 1 using HLA-A2.1 transgenic mice.
AU Man S; Newberg M H; Crotzer V L; Luckey C J; Williams N S; Chen Y; Huczko E L; Ridge J P; Engelhard V H
CS Department of Microbiology, University of Virginia, Charlottesville 22908, USA.
NC AI21393 (NIAID)
AI20963 (NIAID)
CA 9109 (NCI)
SO INTERNATIONAL IMMUNOLOGY, (1995 Apr) 7 (4) 597-605.
Journal code: AY5. ISSN: 0953-8178.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199601
TI Definition of a human T cell epitope from influenza A non-structural protein 1 using HLA-A2.1 transgenic mice.
SO INTERNATIONAL IMMUNOLOGY, (1995 Apr) 7 (4) 597-605.
Journal code: AY5. ISSN: 0953-8178.
AU Man S; Newberg M H; Crotzer V L; Luckey C J; Williams N S; Chen Y; Huczko E L; Ridge J P; Engelhard V H
AB Previous results from this laboratory demonstrated that the dominant influenza A epitope recognized by HLA-A2.1-restricted cytotoxic T lymphocytes (**CTL**) from HLA-A2.1 transgenic mice was the matrix protein 1 (M1) peptide epitope that is immunodominant in human **CTL** responses. However, analysis of a large number of **CTL** lines revealed a subset of influenza A/PR/8/34-specific murine **CTL** that recognized an HLA-A2.1-restricted epitope distinct from M1. Using recombinant vaccinia viruses encoding different influenza gene segments, the epitope recognized by these **CTL** was shown to be derived from A/PR/8 non-structural protein 1 (**NS1**). Because these **CTL** did not recognize targets infected with the A/Alaska/6/77 strain of influenza, candidate peptide epitopes were synthesized based on sequences that included an HLA-A2.1-specific binding motif, and that differed between A/PR/8 and A/Alaska. All of these **CTL** recognized a nonamer and a decamer peptide which contained a common eight amino acid sequence and two distinct sets of binding motif residues. However, the nonamer peptide was able to sensitize **CTL** for half-maximal lysis at 80- to 2500-fold lower doses than either the octamer or decamer. The homologous peptide derived from A/Alaska **NS1** contained conservative amino acid changes at positions 4 and 8, and was not recognized at any tested concentration, although it bound with higher affinity to HLA-A2.1 than the peptide from A/PR/8. The A/PR/8 **NS1** nonamer epitope was also recognized by human influenza A-specific **CTL** derived from two individuals. These results substantiate the general utility of HLA class I transgenic mice for the identification of human **CTL** epitopes for other pathogens.

TI DR4Dw4/DR53 molecules contain a peptide from the autoantigen calreticulin
SO Tissue Antigens (1995), 45(4), 270-5
CODEN: TSANA2; ISSN: 0001-2815
AU Verreck, F. A. W.; Elferink, D.; Vermeulen, C. J.; Amons, R.; Breedveld, F.; de Vries, R. R. P.; Koning, F.

L5 ANSWER 44 OF 138 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1995:449454 CAPLUS
DOCUMENT NUMBER: 122:236586
TITLE: **T-helper epitopes** of the E7 transforming protein of cervical cancer associated human papillomavirus type 18 (HPV18)
AUTHOR(S): Fernando, Germain J. P.; Tindle, Robert W.; Frazer, Ian H.
CORPORATE SOURCE: Papillomavirus Research Unit, Lions Human Immunology Laboratories, University of Queensland Department of Medicine, Princess Alexandra Hospital, Woolloongabba 4102, Queensland, Australia
SOURCE: Virus Res. (1995), 36(1), 1-13
CODEN: VIREDF; ISSN: 0168-1702
DOCUMENT TYPE: Journal
LANGUAGE: English
TI **T-helper epitopes** of the E7 transforming protein of cervical cancer associated human papillomavirus type 18 (HPV18

TI DR4Dw4/DR53 molecules contain a peptide from the autoantigen calreticulin
SO Tissue Antigens (1995), 45(4), 270-5
CODEN: TSANA2; ISSN: 0001-2815
AU Verreck, F. A. W.; Elferink, D.; Vermeulen, C. J.; Amons, R.; Breedveld, F.; de Vries, R. R. P.; Koning, F.

L5 ANSWER 44 OF 138 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1995:449454 CAPLUS
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SOURCE: Virus Res. (1995), 36(1), 1-13
CODEN: VIREDF; ISSN: 0168-1702
DOCUMENT TYPE: Journal
LANGUAGE: English
TI **T-helper epitopes** of the E7 transforming protein of cervical cancer associated human papillomavirus type 18 (HPV18

TI DR4Dw4/DR53 molecules contain a peptide from the autoantigen calreticulin
SO Tissue Antigens (1995), 45(4), 270-5
CODEN: TSANA2; ISSN: 0001-2815
AU Verreck, F. A. W.; Elferink, D.; Vermeulen, C. J.; Amons, R.; Breedveld, F.; de Vries, R. R. P.; Koning, F.

L5 ANSWER 44 OF 138 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1995:449454 CAPLUS
DOCUMENT NUMBER: 122:236586
TITLE: **T-helper epitopes** of the E7 transforming protein of cervical cancer associated human papillomavirus type 18 (HPV18)
AUTHOR(S): Fernando, Germain J. P.; Tindle, Robert W.; Frazer, Ian H.
CORPORATE SOURCE: Papillomavirus Research Unit, Lions Human Immunology Laboratories, University of Queensland Department of Medicine, Princess Alexandra Hospital, Woolloongabba 4102, Queensland, Australia
SOURCE: Virus Res. (1995), 36(1), 1-13
CODEN: VIREDF; ISSN: 0168-1702
DOCUMENT TYPE: Journal
LANGUAGE: English
TI **T-helper epitopes** of the E7 transforming protein of cervical cancer associated human papillomavirus type 18 (HPV18

L5 ANSWER 61 OF 138 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1993:5196 CAPLUS
DOCUMENT NUMBER: 118:5196
TITLE: T and B cell responses to chimeric proteins containing heterologous **T helper epitopes** inserted at different positions
AUTHOR(S): Loewenadler, Bjorn; Lycke, Nils; Svanholm, Cecilia; Svennerholm, Ann-Mari; Krook, Katarina; Gidlund, Magnus
CORPORATE SOURCE: Kabi Pharm. Biopharm. AB, Stockholm, S-112 87, Swed.
SOURCE: Mol. Immunol. (1992), 29(10), 1185-90
CODEN: MOIMD5; ISSN: 0161-5890
DOCUMENT TYPE: Journal

LANGUAGE: English
TI T and B cell responses to chimeric proteins containing heterologous **T helper epitopes** inserted at different positions
SO Mol. Immunol. (1992), 29(10), 1185-90
CODEN: MOIMD5; ISSN: 0161-5890
AU Loewenadler, Bjorn; Lycke, Nils; Svanholm, Cecilia; Svennerholm, Ann-Mari; Krook, Katarina; Gidlund, Magnus

L5 ANSWER 62 OF 138 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1992:631746 CAPLUS
DOCUMENT NUMBER: 117:231746
TITLE: Immunogenicity of free synthetic peptides corresponding to **T helper epitopes** of the influenza HA 1 subunit: induction of virus cross reacting CD4+ T lymphocytes in mice
AUTHOR(S): Schneider, C.; Van Regenmortel, M. H. V.
CORPORATE SOURCE: Inst. Biol. Mol. Cell., CNRS, Strasbourg, Fr.
SOURCE: Arch. Virol. (1992), 125(1-4), 103-19
CODEN: ARVIDF; ISSN: 0304-8608
DOCUMENT TYPE: Journal
LANGUAGE: English

TI Immunogenicity of free synthetic peptides corresponding to **T helper epitopes** of the influenza HA 1 subunit: induction of virus cross reacting CD4+ T lymphocytes in mice
SO Arch. Virol. (1992), 125(1-4), 103-19
CODEN: ARVIDF; ISSN: 0304-8608
AU Schneider, C.; Van Regenmortel, M. H. V.

5 ANSWER 68 OF 138 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1991:653381 CAPLUS
DOCUMENT NUMBER: 115:253381
TITLE: Enhancement of immunogenicity using helper T cell epitopes
AUTHOR(S): Cease, Kemp B.
CORPORATE SOURCE: USA
SOURCE: Top. Vaccine Adjuvant Res. (1991), 109-18.
Editor(s):
Spriggs, Dale R.; Koff, Wayne C. CRC: Boca Raton, Fla.
CODEN: 57EQAC
DOCUMENT TYPE: Conference; General Review
LANGUAGE: English
TI Enhancement of immunogenicity using helper T cell epitopes
SO Top. Vaccine Adjuvant Res. (1991), 109-18. Editor(s): Spriggs, Dale R.; Koff, Wayne C. Publisher: CRC, Boca Raton, Fla.
CODEN: 57EQAC
AU Cease, Kemp B.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE 'BIOSIS' ENTERED AT 12:40:42 ON 23 AUG 2001

=> (viral like particle)

L1 48 (VIRAL LIKE PARTICLE)

=> PHV

L2 371 PHV

=> L1 and L2

L3 0 L1 AND L2

=> (human papapilloma virus)

L4 0 (HUMAN PAPAPILLOMA VIRUS)

=> (Human Papilloma virus)

L5 3622 (HUMAN PAPILLOMA VIRUS)

=> L5 and L1

L6 1 L5 AND L1

=> L1 or L2 (1) E6 or E7 and L5

'E6' NOT FOUND
The E# entered is not currently defined.

=> Vaccine and L5

L7 131 VACCINE AND L5

=> D L7 IBIB TI SO AU ABS 1-113

L7 ANSWER 1 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2001:526101 CAPLUS
DOCUMENT NUMBER: 135:121185
TITLE: Fusion proteins of antigens and peptides directing protein uptake or secretion and their use in **vaccines**
INVENTOR(S): Mueller, Martin; Michel, Nico; Osen, Wolfram; Gissmann, Lutz; Zentgraf, Hanswalter
PATENT ASSIGNEE(S): Deutsches Krebsforschungszentrum Stiftung des Oeffentlichen Rechts, Germany
SOURCE: PCT Int. Appl., 23 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

WO 2001051516	A2	20010719	WO 2001-DE100134	20010115	

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

DE 10001230	A1	20010802	DE 2000-10001230	20000113	

PRIORITY APPLN. INFO.: DE 2000-10001230 A 20000113

TI Fusion proteins of antigens and peptides directing protein uptake or secretion and their use in **vaccines**

SO PCT Int. Appl., 23 pp.
CODEN: PIXXD2

IN Mueller, Martin; Michel, Nico; Osen, Wolfram; Gissmann, Lutz; Zentgraf, Hanswalter

AB The invention relates to a fusion protein of a peptide directing cell import or export and an antigen suitable for immunizing an individual against a disease, together with a DNA that codes for said protein. The invention also relates to the use of both the protein and DNA for immunizing an individual against diseases, in particular against infection-induced auto-immune and tumor diseases. The gene for a fusion protein of the transport sequence of the VP22 protein of HSV-1 and the E7 protein of **human papilloma virus** 16 was constructed and expressed in bacterial cells using the com. expression vector pET28a(+). Expression of the gene in mice using the vector pcDNA3.1 is demonstrated. Mice vaccinated with the vector mounted a cytotoxic T-cell response to the E7 protein.

L7 ANSWER 2 OF 131 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER:	2001:370618 CAPLUS
DOCUMENT NUMBER:	135:45261
TITLE:	Removal of tightly bound endotoxin from biological products
AUTHOR(S):	Wilson, M. J.; Haggart, C. L.; Gallagher, S. P.; Walsh, D.
CORPORATE SOURCE:	Downstream Process Development, Xenova, Cambridge, CB4 0WG, UK
SOURCE:	J. Biotechnol. (2001), 88(1), 67-75 CODEN: JBITD4; ISSN: 0168-1656
PUBLISHER:	Elsevier Science Ltd.
DOCUMENT TYPE:	Journal
LANGUAGE:	English

TI Removal of tightly bound endotoxin from biological products

SO J. Biotechnol. (2001), 88(1), 67-75
CODEN: JBITD4; ISSN: 0168-1656

AU Wilson, M. J.; Haggart, C. L.; Gallagher, S. P.; Walsh, D.

AB The method for endotoxin removal described in this paper is useful for sepn. of tightly bound endotoxin from biol. products, particularly those produced in Escherichia coli in the form of inclusion bodies for which a denaturation step is required to solubilize the product. We employed guanidine hydrochloride and ammonium sulfate in combination with hydrophobic interaction chromatog. (HIC). These conditions enable binding of the endotoxin to the matrix, giving unbound product in the column flow-through. This makes the method generally applicable to biol.

products. An endotoxin redn. of about 3.7 logs was achieved; from as much as 1,100,000 EU mg-1 in the solubilized material to about 200 EU mg-1 in the product purified by this method. The method was developed for a cervical dysplasia **vaccine**, a fusion protein comprising L2, E7 and E6 from **human papilloma virus** type 16, because both conventional and com. available methods of endotoxin removal were ineffective in removing the tightly bound endotoxin from this pro

L7 ANSWER 4 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2001:247370 CAPLUS
DOCUMENT NUMBER: 134:265145
TITLE: **Vaccine**
INVENTOR(S): Antonsson, Per; Kristensson, Karin; Wallen-Oehman, Marie; Dillner, Joakim; Lando, Peter
PATENT ASSIGNEE(S): Active Biotech AB, Swed.
SOURCE: PCT Int. Appl., 17 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001023422	A1	20010405	WO 2000-SE1808	20000919
W: AE, AG, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
SE 9903534	A	20010331	SE 1999-3534	19990930
SE 514982	C2	20010528		

PRIORITY APPLN. INFO.: SE 1999-3534 A 19990930
TI **Vaccine**
SO PCT Int. Appl., 17 pp.
CODEN: PIXXD2
IN Antonsson, Per; Kristensson, Karin; Wallen-Oehman, Marie; Dillner, Joakim;
Lando, Peter
AB The invention relates to a carrier for introduction of a substance into cells, comprising a major capsid protein L1 of human papillomavirus (HPV-L1 protein) which has been intentionally modified to remove type-specific epitope(s) causing prodn. of neutralizing antibodies. The invention also includes an oligo- or polynucleotide coding for said carrier, **vaccines** comprising said carrier or said oligo- or polynucleotide, as well as methods of using the carrier or the oligo- or polynucleotide in vaccination against infections of human papillomavirus, or against development of consequences of such an infection, or against development of certain cancers.
REFERENCE COUNT: 4
REFERENCE(S):
(1) Hines, J; Pathobiology 1994, V62(4), P165 CAPLUS
(2) Inserm; WO 9915630 A1 1999 CAPLUS
(3) Medigene Aktiengesellschaft; WO 9948518 A2 1999 CAPLUS
(4) Medigene Gesellschaft Fur Molekularbiologische Diagnostik; WO 9611272 A2 1996 CAPLUS

TI Use of semi-allogeneic cell line-peptide complexes for the treatment of cancer, AIDS and other viral diseases
SO PCT Int. Appl., 95 pp.
CODEN: PIXXD2
IN Gattoni-celli, Sebastiano; Shearer, Gene; Grene, Edith; Newton, Danforth A.; Brown, Edwin A.; Berzofsky, Jay A.; Degroot, Anne S.
AB The present invention provides a compn. comprising a semi-allogeneic hybrid fusion cell and an immunogenic peptide. In particular, isolated peptides of HIV (Human Immunodeficiency Virus), HTLV-1, Hepatitis B virus, Hepatitis C virus, rubeola virus, influenza A virus and **Human Papilloma Virus** are provided in the compns. of the present invention. Moreover, isolated cancer-specific peptides specific to a cancer, for example, B cell lymphoma, T cell lymphoma, myeloma, leukemia, breast cancer, pancreatic cancer, colon cancer, lung cancer, renal cancer, liver cancer, prostate cancer, melanoma and cervical cancer are provided in the compns. of the present invention. Moreover, the present invention provides a method of treating a subject infected by one or more of HIV, HTLV-1, Hepatitis B virus, Hepatitis C virus, rubeola virus, influenza A virus and **Human Papilloma Virus**, comprising administering a compn. comprising an effective amt. of a hybrid fusion cell and an effective amt. of an isolated immunogenic peptide of the virus in a pharmaceutically acceptable carrier.
Further, the present invention provides a method of treating cancer in a subject with one or more of B cell lymphoma, T cell lymphoma, myeloma, leukemia, breast cancer, pancreatic cancer, colon cancer, lung cancer, renal cancer, liver cancer, prostate cancer, melanoma and cervical cancer, comprising administering a compn. comprising an effective amt. of a hybrid fusion cell and an effective amt. of an isolated immunogenic peptide of the cancer in a pharmaceutically acceptable carrier.

L7 ANSWER 8 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2000:769314 CAPLUS
DOCUMENT NUMBER: 134:308604
TITLE: **Human papilloma virus** (HPV) and uterine cervical cancer
AUTHOR(S): Inoue, Masaki
CORPORATE SOURCE: Department of Obstetrics and Gynecology, School of Medical Science, Kanazawa University, Kanazawa, Japan
SOURCE: Nippon Sanka Fujinka Gakkai Zasshi (2000), 52(8), 1292-1301
CODEN: NISFAY; ISSN: 0300-9165
PUBLISHER: Nippon Sanka Fujinka Gakkai
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese
TI **Human papilloma virus** (HPV) and uterine cervical cancer
SO Nippon Sanka Fujinka Gakkai Zasshi (2000), 52(8), 1292-1301
CODEN: NISFAY; ISSN: 0300-9165
AU Inoue, Masaki
AB A review with 33 refs. Cancer is a multistep process with the clin. invasive tumor being the final stage in a long saga of cellular genetic events. Invasive cancer of the cervix is preceded by histol. distinct intraepithelial lesions (CINs). These precursor lesions are closely assocd. with HPV infection. Until now, more than 80 types of HPV were identified and sequenced. Among them, HPV types 16, 18, and other high-risk types such as HPV 31, 33, 39, 45, 51, 56, 58 and 59 are closely

involved in the development of CINs and cervical cancer. Oncoproteins E6 and E7 of high-risk HPVs such as 16 and 18 bind directly to p53 and Rb proteins, resp. and block their anti-oncogenic function, allowing the uncontrolled growth of the HPV infected cells. The recent research has shown that telomerase activation by E6 and inactivation of Rb/p16 pathway by E7 are essential for immortalization of epithelial cells. HPV infection is the major risk factor for cervical neoplasia, although the full cell transformation requires the addnl. genetic changes on the target cells including activation of oncogenes, and/or inactivation of anti-oncogenes and mismatched DNA repair genes. Prevention of HPV infection is the first step protection from cervical cancer. HPV is sexually transmitted in ordinary life and is detected around 10% of normal females. Many epidemiol. studies have shown a strong assocn. of high risk HPV types with high-grade CIN. The CINs integrated in host DNA with high-risk HPVs genomes mostly likely progress toward upper stage in oncogenesis. Therefore, high-grade CIN or even low-grade CIN with high-risk HPV should be aggressively treated by a surgical technique. Pap smear test has been utilized in gynecol. field as a cancer screening test for many years with fruitful results. Addnl. application of HPV test using a conventional typing method with high sensitivity/specificity in practical medicine may reduce the cancer-death more and also reduce the cost. The development of successful HPV-specific **vaccines** may offer an attractive alternative to existing screening and treatment programs for cervical cancer in near future.

TI **Human papilloma virus** (HPV) and uterine cervical cancer

SO Nippon Sanka Fujinka Gakkai Zasshi (2000), 52(8), 1292-1301
CODEN: NISFAY; ISSN: 0300-9165

AU Inoue, Masaki

AB A review with 33 refs. Cancer is a multistep process with the clin. invasive tumor being the final stage in a long saga of cellular genetic events. Invasive cancer of the cervix is preceded by histol. distinct intraepithelial lesions (CINs). These precursor lesions are closely assocd. with HPV infection. Until now, more than 80 types of HPV were identified and sequenced. Among them, HPV types 16, 18, and other high-risk types such as HPV 31, 33, 39, 45, 51, 56, 58 and 59 are closely involved in the development of CINs and cervical cancer. Oncoproteins E6 and E7 of high-risk HPVs such as 16 and 18 bind directly to p53 and Rb proteins, resp. and block their anti-oncogenic function, allowing the uncontrolled growth of the HPV infected cells. The recent research has shown that telomerase activation by E6 and inactivation of Rb/p16 pathway by E7 are essential for immortalization of epithelial cells. HPV infection is the major risk factor for cervical neoplasia, although the full cell transformation requires the addnl. genetic changes on the target cells including activation of oncogenes, and/or inactivation of anti-oncogenes and mismatched DNA repair genes. Prevention of HPV infection is the first step protection from cervical cancer. HPV is sexually transmitted in ordinary life and is detected around 10% of normal females. Many epidemiol. studies have shown a strong assocn. of high risk HPV types with high-grade CIN. The CINs integrated in host DNA with high-risk HPVs genomes mostly likely progress toward upper stage in oncogenesis. Therefore, high-grade CIN or even low-grade CIN with high-risk HPV should be aggressively treated by a surgical technique. Pap smear test has been utilized in gynecol. field as a cancer screening test for many years with fruitful results. Addnl. application of HPV test using a conventional typing method with high sensitivity/specificity in practical medicine may reduce the cancer-death more and also reduce the cost. The development of successful HPV-specific **vaccines** may offer an attractive alternative to existing screening and treatment programs for cervical cancer in near future.

L7 ANSWER 9 OF 131 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 2000:593493 CAPLUS

DOCUMENT NUMBER: 133:280254

TITLE: Identification in humans of HPV-16 E6 and E7 protein epitopes recognized by cytolytic T lymphocytes in association with HLA-B18 and determination of the HLA-B18-specific binding motif

AUTHOR(S): Villada, Isabelle Bourgault; Beneton, Nathalie; Bony, Claire; Connan, Francine; Monsonego, Jean; Bianchi, Anne; Saiag, Philippe; Levy, Jean Paul; Guillet, Jean Gerard; Choppin, Jeannine

CORPORATE SOURCE: Institut Cochin de Genetique Moleculaire, Laboratoire d'Immunologie des Pathologies Infectieuses et Tumorales, INSERM U445, Universite Rene Descartes, Hopital Cochin, Paris, Fr.

SOURCE: Eur. J. Immunol. (2000), 30(8), 2281-2289
CODEN: EJIMAF; ISSN: 0014-2980

PUBLISHER: Wiley-VCH Verlag GmbH

DOCUMENT TYPE: Journal

LANGUAGE: English

L7 ANSWER 10 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2000:553437 CAPLUS
DOCUMENT NUMBER: 133:155384
TITLE: **Human papilloma virus vaccine** formulations
INVENTOR(S): Volkin, David B.; Shi, Li; Mach, Henryk
PATENT ASSIGNEE(S): Merck and Co., Inc., USA
SOURCE: PCT Int. Appl., 22 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000045841	A2	20000810	WO 2000-US2463	20000201
WO 2000045841	A3	20001214		
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6251678	B1	20010626	US 2000-496812	20000202

PRIORITY APPLN. INFO.: US 1999-118723 P 19990205

TI **Human papilloma virus vaccine** formulations
SO PCT Int. Appl., 22 pp.
CODEN: PIXXD2
IN Volkin, David B.; Shi, Li; Mach, Henryk
AB New **human papilloma virus** (HPV) **vaccine** formulations exhibit enhanced long-term stability. Formulation components can include: virus-like particles (VLPs) adsorbed onto aluminum, a salt, non-ionic surfactant, and a buffer. Addnl. formulations also contain a polymeric polyanionic stabilizer and a salt either in the presence or absence buffering agents and nonionic detergent.

L7 ANSWER 16 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1999:626063 CAPLUS
DOCUMENT NUMBER: 131:241978
TITLE: Papillomavirus L1 protein- and E protein-derived fusion protein medicament for preventing or treating papilloma virus-specific tumors
INVENTOR(S): Burger, Alexander; Hallek, Michael
PATENT ASSIGNEE(S): Medigene Aktiengesellschaft, Germany
SOURCE: PCT Int. Appl., 36 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9948518	A2	19990930	WO 1999-EP1996	19990324
WO 9948518	A3	19991202		
W: AU, CA, JP, MX, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
DE 19812941	A1	19991007	DE 1998-19812941	19980324
AU 9935214	A1	19991018	AU 1999-35214	19990324
EP 1064014	A2	20010103	EP 1999-916884	19990324
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

PRIORITY APPLN. INFO.: DE 1998-19812941 A 19980324
WO 1999-EP1996 W 19990324

TI Papillomavirus L1 protein- and E protein-derived fusion protein medicament
for preventing or treating papilloma virus-specific tumors
SO PCT Int. Appl., 36 pp.
CODEN: PIXXD2
IN Burger, Alexander; Hallek, Michael
AB A medicament is provided for preventing or treating **human papilloma virus** (HPV)-specific tumors which contains at least one fusion protein and optional suitable additives and/or auxiliary agents. The fusion protein is comprised of at least one L1 protein of one or more papilloma viruses and at least one E-protein of one or more papilloma viruses, whereby the fusion protein does not contain any papilloma virus nonspecific epitopes.

L7 ANSWER 20 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1999:292793 CAPLUS
DOCUMENT NUMBER: 131:140115
TITLE: Construction of recombinant adenovirus vector of **human papilloma virus** HPV16L1-E7C
AUTHOR(S): Wang, Yun; Yu, Xiuping; Bian, Jifeng; Zhao, Weiming; Dong, Jiede; Jia, Jihui; Zhou, Yabin; Luan, Yi; Qi, Mei; Chen, Huabo
CORPORATE SOURCE: Dept. of Microbiology, Shandong Medical University, Jinan, 250012, Peop. Rep. China
SOURCE: Shandong Yike Daxue Xuebao (1999), 37(1), 1-5
CODEN: SYXBEE; ISSN: 1000-0496
PUBLISHER: Shandong Yike Daxue
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

TI Construction of recombinant adenovirus vector of **human papilloma virus** HPV16L1-E7C

SO Shandong Yike Daxue Xuebao (1999), 37(1), 1-5
CODEN: SYXBEE; ISSN: 1000-0496

AU Wang, Yun; Yu, Xiuping; Bian, Jifeng; Zhao, Weiming; Dong, Jiede; Jia, Jihui; Zhou, Yabin; Luan, Yi; Qi, Mei; Chen, Huabo

AB The entire HPV16L-1 gene and C-terminal HPV16E7 gene were amplified from wild type HPV16 plasmid using PCR method. E7C gene and L1 gene are inserted into the pGEM-T easy vector after using T-A cloning of PCR-products. Hind III and digested pTAE7C with restriction endonuclease BamH I, Cla I, E7C and L1 gene were inserted into the polycloning site of clone vector pBlueScriptsk-in which E7C and L1 gene and fused after digested pTAL1 with restriction endonuclease Bgl II. L1-E7C gene was released and inserted into adenovirus vector pCA14, a recombinant adenovirus expressing vector was generated using Hind III and Xho I in polycloning site of recombinant vector pBluesCriptsk.

L7 ANSWER 21 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1999:262176 CAPLUS
DOCUMENT NUMBER: 130:295535
TITLE: Immunogenic peptides from the **human papilloma virus** E7 protein
INVENTOR(S): Urban, Robert G.; Chicz, Roman M.; Collins, Edward J.; Hedley, Mary Lynne
PATENT ASSIGNEE(S): Pangaea Pharmaceuticals, Inc., USA
SOURCE: PCT Int. Appl., 40 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9918995	A1	19990422	WO 1998-US21456	19981009
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6013258	A	20000111	US 1997-948378	19971009
AU 9897992	A1	19990503	AU 1998-97992	19981009
EP 1021202	A1	20000726	EP 1998-952244	19981009
R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, LU, NL, SE, MC, PT, IE, FI				

PRIORITY APPLN. INFO.: US 1997-948378 A1 19971009
WO 1998-US21456 W 19981009

TI Immunogenic peptides from the **human papilloma virus** E7 protein
SO PCT Int. Appl., 40 pp.
CODEN: PIXXD2
IN Urban, Robert G.; Chicz, Roman M.; Collins, Edward J.; Hedley, Mary Lynne
AB The invention provides immunogenic peptides from the HPV type 16 E7 protein that comprise overlapping class I restricted T cell epitopes. Also disclosed are methods of administering DNA mols. encoding these peptides to a host mammal.
REFERENCE COUNT: 7
REFERENCE(S):
(1) Bartsch; US 5547846 A 1996 CAPLUS
(2) Feltkamp; European Journal of Immunology 1993, V23, P2242 CAPLUS
(3) Gao; The Journal of Immunology 1995, V155, P5519 CAPLUS
(4) Khan; US 5413797 A 1995 CAPLUS
(5) Ressing; Cancer Research 1996, V56, P582 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 22 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1999:244768 CAPLUS
DOCUMENT NUMBER: 130:280851
TITLE: **Vaccines** containing L1 capsomere fusion proteins for prevention and treatment of human papillomavirus infection
INVENTOR(S): Gissmann, Lutz; Muller, Martin
PATENT ASSIGNEE(S): Loyola University of Chicago, USA
SOURCE: PCT Int. Appl., 48 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9918220	A1	19990415	WO 1998-US20965	19981006
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6228368	B1	20010508	US 1997-944368	19971006
AU 9896846	A1	19990427	AU 1998-96846	19981006
EP 1021547	A1	20000726	EP 1998-950930	19981006
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
NO 2000001768	A	20000602	NO 2000-1768	20000406

PRIORITY APPLN. INFO.: US 1997-944368 A 19971006
WO 1998-US20965 W 19981006

TI **Vaccines** containing L1 capsomere fusion proteins for prevention and treatment of human papillomavirus infection
SO PCT Int. Appl., 48 pp.
CODEN: PIXXD2
IN Gissmann, Lutz; Muller, Martin
AB The invention provides **vaccine** formulations comprising chimeric **human papilloma virus** capsomeres and methods for prodn. and purifn. of said capsomeres. According to the present invention, **vaccine** formulations comprise either: (i) a first protein that is an intact viral protein expressed as a fusion protein comprised in part of amino acid residues from a second protein; (ii) a truncated viral protein; (iii) a truncated viral protein expressed as a fusion protein comprised in part of amino acid residues from a second protein, or (iv) some combination of the three types of proteins. The invention also provides therapeutic methods for treating patients infected with HPV as well as prophylactic methods for preventing HPV infection in a susceptible individual.

REFERENCE COUNT: 6
REFERENCE(S):
(1) Gissmann, L; DE 4435907 A 1996 CAPLUS
(2) LI, M; JOURNAL OF VIROLOGY 1997, V71(4), P2988 CAPLUS
(3) Muller, M; VIROLOGY 1997, V234(1), P93 CAPLUS
(4) Paintsil, J; VIROLOGY 1996, V223(1), P238 CAPLUS
(6) Us Department Of Health; WO 9611274 A 1996 CAPLUS

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 23 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1999:234275 CAPLUS
DOCUMENT NUMBER: 130:266132
TITLE: Induction of HPV16 capsid protein-specific human T cell responses by virus-like particles
AUTHOR(S): Rudolf, Michael P.; Nieland, John D.; DaSilva, Diane M.; Velders, Markwin P.; Mueller, Martin; Greenstone, Heather L.; Schiller, John T.; Kast, W. Martin
CORPORATE SOURCE: Cancer Immunology Program, Cardinal Bernardin Cancer Center, Loyola University Chicago, Maywood, IL, 60153, USA
SOURCE: Biol. Chem. (1999), 380(3), 335-340
CODEN: BICHF3; ISSN: 1431-6730
PUBLISHER: Walter de Gruyter & Co.
DOCUMENT TYPE: Journal
LANGUAGE: English
TI Induction of HPV16 capsid protein-specific human T cell responses by virus-like particles
SO Biol. Chem. (1999), 380(3), 335-340
CODEN: BICHF3; ISSN: 1431-6730
AU Rudolf, Michael P.; Nieland, John D.; DaSilva, Diane M.; Velders, Markwin P.; Mueller, Martin; Greenstone, Heather L.; Schiller, John T.; Kast, W. Martin
AB It was postulated that upon binding to a cell surface receptor, papilloma virus-like particles (VLPs) gain entry into the cytosol of infected cells and the capsid proteins L1 and L2 can be processed in the MHC class I presentation pathway. Vaccination of mice with **human papilloma virus**-like particles consisting of capsid proteins L1 and L2 induced a CD8-mediated and perforin dependent protective immune response against a tumor challenge with **human papilloma virus** transformed tumor cells, which express only minute amts. of L1 protein. The authors show that HPV16 capsid proteins stimulate a MHC class I restricted CTL response with human peripheral blood lymphocytes (PBL) in vitro. The vigorous response was specific for VLP-infected target cells and was MHC class I restricted. The authors show the presence of at least 1 HLA-A*0201 restricted CTL epitope within the HPV-16 capsid proteins by a VLP-'infected' HLA-A*0201 transfected human cell line as target cells. These results demonstrated that VLPs can induce a HPV16 capsid protein-specific immune response in humans, allowing the monitoring of immune responses induced by **vaccines** based on chimeric VLPs carrying addnl. immunogenic peptides or proteins in therapeutical applications in human patients.
REFERENCE COUNT: 22
REFERENCE(S): (1) De Bruijn, M; Virology 1998, V250, P371 CAPLUS
(2) Evander, M; J Virol 1997, V71, P2449 CAPLUS
(3) Greenstone, H; Proc Natl Acad Sci USA 1998, V95, P1800 CAPLUS
(4) Kirnbauer, R; J Virol 1993, V67, P6929 CAPLUS
(5) Kirnbauer, R; Proc Natl Acad Sci USA 1992, V89, P12180 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 24 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1999:169190 CAPLUS
DOCUMENT NUMBER: 131:17779
TITLE: Interleukin 2 gene therapy of residual disease in mice

carrying tumors induced by HPV 16

AUTHOR(S): Bubenik, Jan; Simova, Jana; Hajkova, Romana; Sobota, Vesna; Jandlova, Tana; Smahel, Michal; Sobotkova, Eva;
Vonka, Vladimir

CORPORATE SOURCE: Institute of Molecular Genetics, Academy of Sciences of the Czech Republic, Prague, 166 37/6, Czech Rep.

SOURCE: Int. J. Oncol. (1999), 14(3), 593-597
CODEN: IJONES; ISSN: 1019-6439

PUBLISHER: International Journal of Oncology

DOCUMENT TYPE: Journal

LANGUAGE: English

7 ANSWER 27 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1999:48803 CAPLUS
DOCUMENT NUMBER: 130:109204
TITLE: **Human papilloma virus** capsomeres presenting neutralizing epitopes of the L1 protein for use in diagnosis, prophylaxis, and treatment of infection
INVENTOR(S): Suzich, Joann A.; McCarthy, Michael P.; Rose, Robert C.; Garcea, Robert L.
PATENT ASSIGNEE(S): University of Colorado, University Technology Corporation, USA; University of Rochester; Medimmune, Inc.
SOURCE: PCT Int. Appl., 89 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9901557	A1	19990114	WO 1998-US13799	19980702
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9882842	A1	19990125	AU 1998-82842	19980702
EP 1000157	A1	20000517	EP 1998-933101	19980702
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

PRIORITY APPLN. INFO.: US 1997-888050 19970703
WO 1998-US13799 19980702

TI **Human papilloma virus** capsomeres presenting neutralizing epitopes of the L1 protein for use in diagnosis, prophylaxis, and treatment of infection
SO PCT Int. Appl., 89 pp.
CODEN: PIXXD2
IN Suzich, Joann A.; McCarthy, Michael P.; Rose, Robert C.; Garcea, Robert L.
AB Stable human papillomavirus (HPV) capsomeres of the L1 capsid protein pentamer presenting at least one virus-neutralizing conformational epitope of a native HPV L1 protein and that are substantially incapable of assembly into virus-like particles are described. These capsomeres, because of their smaller size, and immunogenic properties are well suited for use in HPV **vaccines** and as diagnostic agents. Moreover, because of their smaller size (relative to VLPs), these stable capsomeres may be easily purified and should result in HPV **vaccines** of greater homogeneity. Human papillomavirus 11 virus-like particles were manufd. using a baculovirus expression system. Incorporation of the L1 protein into the capsid involved the formation of very stable disulfide bridges. Prolonged exposure of virus-like particles to high concns. of reducing agents led to the formation of a homogeneous population of capsomeres, whereas treatment with carbonate (pH 9.6) led to the breakdown

of the capsid into poorly organized structures. The capsomeres retained cross reactivity with a no. of monoclonal antibodies. Inoculation of rabbits with the capsomeres led to the development of a strong HPV-11-specific response.

REFERENCE COUNT: 7

REFERENCE(S):
(1) Li, M; Journal of Virology, Journal Code:KCV 1997, V71(4), P2988 CAPLUS
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(4) Sapp, M; Journal of Virology Journal Code:KCV 1998, V72(7), P6186 CAPLUS
(5) Suzich, J; Proceedings of the National Academy of Sciences of USA 1995, V92, P11553 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 28 OF 131 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1998:672668 CAPLUS

DOCUMENT NUMBER: 129:287760

TITLE: The major capsid protein L of papillomaviruses and their use in diagnosis, prophylaxis, and therapeutics

INVENTOR(S): De Villiers-Zur Hausen, Ethel-Michele; Zur Hausen, Harald; Lavergne, Donna; Benton, Claire

PATENT ASSIGNEE(S): Deutsches Krebsforschungszentrum Stiftung Des Offentlichen Rechts, Germany

SOURCE: PCT Int. Appl., 24 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9842847	A2	19981001	WO 1998-DE876	19980324
WO 9842847	A3	19990311		
W: JP, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
DE 19712541	C1	19981105	DE 1997-19712541	19970325
EP 972047	A2	20000119	EP 1998-928070	19980324
R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE				

PRIORITY APPLN. INFO.: DE 1997-19712541 19970325
WO 1998-DE876 19980324

TI The major capsid protein L of papillomaviruses and their use in diagnosis, prophylaxis, and therapeutics

SO PCT Int. Appl., 24 pp.
CODEN: PIXXD2

IN De Villiers-Zur Hausen, Ethel-Michele; Zur Hausen, Harald; Lavergne, Donna; Benton, Claire

AB The gene for the major capsid protein L of a **human papilloma virus** obtained from a wart is described. The gene and the protein can be used in the diagnosis, prophylaxis, and treatment of papillomavirus infection (no data). The virus was identified in wart biopsies by hybridization with a probe derived from human papillomavirus 5C.

L7 ANSWER 33 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1998:239123 CAPLUS
DOCUMENT NUMBER: 128:307514
TITLE: **Vaccines** for infections and cancers
INVENTOR(S): Garcon, Nathalie; Friede, Martin
PATENT ASSIGNEE(S): Smithkline Beecham Biologicals S.A., Belg.; Garcon, Nathalie; Friede, Martin
SOURCE: PCT Int. Appl., 31 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9815287	A1	19980416	WO 1997-EP5578	19970930
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9747812	A1	19980505	AU 1997-47812	19970930
AU 714930	B2	20000113		
BR 9711853	A	19990824	BR 1997-11853	19970930
EP 939650	A1	19990908	EP 1997-910430	19970930
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI				
CN 1238696	A	19991215	CN 1997-180166	19970930
JP 2001501640	T2	20010206	JP 1998-517196	19970930
ZA 9708868	A	19990406	ZA 1997-8868	19971003
NO 9901524	A	19990329	NO 1999-1524	19990329

PRIORITY APPLN. INFO.: GB 1996-20795 A 19961005
WO 1997-EP5578 W 19970930

TI **Vaccines** for infections and cancers
SO PCT Int. Appl., 31 pp.
CODEN: PIXXD2
IN Garcon, Nathalie; Friede, Martin
AB The invention relates to a **vaccine** compn. comprising an antigen and an adjuvant compn. for treating infections or cancer. The adjuvant compn. comprises alum, an immunol. active saponin fraction (e.g. QS21) assocd. with liposome contg. a phospholipid and a sterol (e.g. cholesterol), and 3-de-O-acylated monophosphoryl lipid A. The antigen is derived from human immunodeficiency virus, feline immunodeficiency virus, varicella zoster virus, herpes simplex virus type 1 and 2, human cytomegalovirus, hepatitis A, B, C or E, respiratory syncytial virus, **human papilloma virus**, influenza virus, Hib, meningitis virus, Salmonella, Neisseria, Borrelia, Chlamydia, Bordetella, Plasmodium, Toxoplasma, or cancer.

L7 ANSWER 34 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1998:193017 CAPLUS
DOCUMENT NUMBER: 128:304534
TITLE: In vitro gene transfer using human papillomavirus-like particles
AUTHOR(S): Touze, Antoine; Coursaget, Pierre

CORPORATE SOURCE: Institut de Virologie de Tours, Faculte des Sciences Pharmaceutiques 'Philippe Maupas', CJF INSERM, Tours, 37200, Fr.
SOURCE: Nucleic Acids Res. (1998), 26(5), 1317-1323
CODEN: NARHAD; ISSN: 0305-1048
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal
LANGUAGE: English

TI In vitro gene transfer using human papillomavirus-like particles

SO Nucleic Acids Res. (1998), 26(5), 1317-1323
CODEN: NARHAD; ISSN: 0305-1048

AU Touze, Antoine; Coursaget, Pierre

AB Recombinant papillomavirus-like particles have recently been shown to be highly effective for the prevention of papillomavirus infections and assocd. tumors, and a virus-like particle-based **vaccine** against the most prevalent HPV causing genital infection in humans will be developed in the near future. Another use of these virus-like particles may lie in gene therapy and DNA immunization. We report here that **human papilloma-virus**-like particles composed of the major capsid protein (L1) of HPV-16 are able to package unrelated plasmid DNA in vitro and then to deliver this foreign DNA to eukaryotic cells with the subsequent expression of the encoded gene. The results indicate higher gene transfer than with DNA alone or with liposome. Virus-like particles are a very promising vehicle for delivering genetic material into target cells. Moreover, the prepn. of the gene transfer vehicle is relatively easy.

L7 ANSWER 35 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1998:106019 CAPLUS
DOCUMENT NUMBER: 128:179356
TITLE: Antigenic peptides of human papillomaviruses for control of infection and the preparation of fusion proteins containing them
INVENTOR(S): Whittle, Nigel Richard; Carmichael, Jeremy Paddon; Connor, Stephen Edward; Thompson, Henry Stephen Grammer; Wilson, Mark Jonathan
PATENT ASSIGNEE(S): Cantab Pharmaceuticals Research Limited, UK
SOURCE: PCT Int. Appl., 47 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9804706	A1	19980205	WO 1996-GB1816	19960729
W: AL, AM, AZ, BB, BG, BR, BY, CN, CU, CZ, EE, FI, GE, HU, IL, IS, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, RO, RU, SD, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: KE, LS, MW, SD, SZ, UG, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
BR 9612675	A	19990720	BR 1996-12675	19960729
CN 1229437	A	19990922	CN 1996-180428	19960729
FI 9900157	A	19990128	FI 1999-157	19990128
NO 9900398	A	19990225	NO 1999-398	19990128

PRIORITY APPLN. INFO.: WO 1996-GB1816 19960729

TI Antigenic peptides of human papillomaviruses for control of infection and the preparation of fusion proteins containing them
SO PCT Int. Appl., 47 pp.
CODEN: PIXXD2
IN Whittle, Nigel Richard; Carmichael, Jeremy Paddon; Connor, Stephen Edward;
Thompson, Henry Stephen Grammer; Wilson, Mark Jonathan
AB Fusion proteins and aggregates of peptides contg. human papillomavirus-derived antigens that can be used as antigens in **vaccines** against human papillomaviruses are described. An example of such a fusion protein is one contg. domains of human papillomavirus proteins L2 and E7. Expression constructs for the manuf. of these proteins in Escherichia coli are described. The L1, L2 and E7 genes of human papillomavirus 6 (HPV6) were cloned and a chimeric gene for an L2-E7
fusion protein constructed in a pET vector by std. methods. T-rich regions were modified to prevent premature modification. The fusion protein was solubilized from inclusion bodies and shown to be immunogenic in mice. In healthy adult male humans, a strong immune response was mounted to HPV6 upon inoculation with the protein at 3, 30, or 300 .mu.g at 0, 7, and 28 days. In some cases, regression of long-established plantar warts could be seen 14 days after vaccination with 3 .mu.g of the fusion protein.

L7 ANSWER 36 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1998:26731 CAPLUS
DOCUMENT NUMBER: 128:126793
TITLE: Protective antitumor immunity induced by vaccination with recombinant adenoviruses encoding multiple

tumor-associated cytotoxic T lymphocyte epitopes in a string-of-beads fashion

AUTHOR(S): Toes, Rene E. M.; Hoeben, Rob C.; van der Voort, Ellen I. H.; Ressing, Maaike E.; van der Eb, Alex J.; Melief, Cornelis J. M.; Offringa, Rienk

CORPORATE SOURCE: Department Immunohematology Blook Bank, University Hospital Leiden, Leiden, 2300 RC, Neth.

SOURCE: Proc. Natl. Acad. Sci. U. S. A. (1997), 94(26), 14660-14665
CODEN: PNASA6; ISSN: 0027-8424

PUBLISHER: National Academy of Sciences

DOCUMENT TYPE: Journal

LANGUAGE: English

TI Protective antitumor immunity induced by vaccination with recombinant adenoviruses encoding multiple tumor-associated cytotoxic T lymphocyte epitopes in a string-of-beads fashion

SO Proc. Natl. Acad. Sci. U. S. A. (1997), 94(26), 14660-14665
CODEN: PNASA6; ISSN: 0027-8424

AU Toes, Rene E. M.; Hoeben, Rob C.; van der Voort, Ellen I. H.; Ressing, Maaike E.; van der Eb, Alex J.; Melief, Cornelis J. M.; Offringa, Rienk

AB **Vaccines** harboring genes that encode functional oncoproteins are intrinsically hazardous, as their application may lead to introduction of these genes into normal cells and thereby to tumorigenesis. Oncoproteins are esp. attractive targets for immunotherapy of cancer, as their expression is generally required for tumor growth, making the rise of tumor variants lacking these antigens unlikely. Using murine tumor models, the authors investigated the efficacy of poly-epitope recombinant adenovirus (rAd) **vaccines**, which encode only the immunogenic T cell epitopes derived from several oncogenes, for the induction of protective anti-tumor immunity. The authors chose to employ rAd, as these are safe vectors that do not induce the side effects assocd. with, for example, vaccinia virus **vaccines**. A single poly-epitope rAd was shown to give rise to presentation of both H-2 and human leukocyte antigen-restricted cytotoxic T lymphocyte (CTL) epitopes. Moreover, vaccination with a rAd encoding H-2-restricted CTL epitopes, derived from human adenovirus type 5 early region 1 and **human papilloma virus** type 16-induced tumors, elicited strong tumor-reactive CTL and protected the vaccinated animals against an otherwise lethal challenge with either of these tumors. The protection induced was superior compared with that obtained by vaccination with irradiated tumor cells. Thus, vaccination with poly-epitope rAd is a powerful approach for the induction of protective anti-tumor immunity that allows simultaneous immunization against multiple tumor-assocd. T cell epitopes, restricted by various major histocompatibility complex haplotypes.

L7 ANSWER 37 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1997:756960 CAPLUS
DOCUMENT NUMBER: 128:12561
TITLE: Methods for selecting and producing T cell peptide epitopes and **vaccines** incorporating said selected epitopes
INVENTOR(S): Van, Der Burg Sjoerd Henricus; Kast, Wybe Martin; Toes, Reinaldus Everardus Maria; Offringa, Rienk; Melief, Cornelius Johannes Maria
PATENT ASSIGNEE(S): Rijksuniversiteit Te Leiden, Neth.; Seed Capital Investments (Sci) B.V.; Van Der Burg, Sjoerd Henricus; Kast, Wybe Martin; Toes, Reinaldus Everardus Maria; Offringa, Rienk; Melief, Cornelius Johannes Maria
SOURCE: PCT Int. Appl., 108 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9741440	A1	19971106	WO 1997-NL229	19970428
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9724106	A1	19971119	AU 1997-24106	19970428
EP 900380	A1	19990310	EP 1997-919749	19970428
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI				
JP 2000510689	T2	20000822	JP 1997-538756	19970428

PRIORITY APPLN. INFO.:
EP 1996-201145 A 19960426
EP 1996-203670 A 19961223
WO 1997-NL229 W 19970428

TI Methods for selecting and producing T cell peptide epitopes and **vaccines** incorporating said selected epitopes
SO PCT Int. Appl., 108 pp.
CODEN: PIXXD2
IN Van, Der Burg Sjoerd Henricus; Kast, Wybe Martin; Toes, Reinaldus Everardus Maria; Offringa, Rienk; Melief, Cornelius Johannes Maria
AB The present invention relates to **vaccines** and methods for providing **vaccines** which elicit T cell response by peptide T cell epitopes when administered to a mammal, in particular a human. These **vaccines** find their application in many fields ranging from cancer treatments to treatments of prophylaxis of infectious diseases such as AIDS. The present invention provides novel methods for selecting the peptide sequences from an intact antigen which will lead to a proper (T cell) immune response upon administration in a suitable vehicle. The epitopes discussed were E6 and E7 proteins of **human papilloma virus** 16 and 18, gag and pol and env proteins of HIV, MAGE-2 and tyrosinase and Melan-A/MART-1 of human melanoma antigen, p21Ras and p53 human oncoproteins, human carcinoembryonic antigen, human epithelial cell adhesion mol., human CD19, CD20, CD44, Ig.

heavy and light chain variable regions, etc.. Also discussed was vaccination with recombinant adenoviruses harboring several defined T cell epitopes in string-of-bead constructs.

L7 ANSWER 39 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1997:623428 CAPLUS
DOCUMENT NUMBER: 127:276887
TITLE: Priming of cytotoxic T lymphocytes by five heat-aggregated antigens in vivo. Conditions, efficiency, and relation to antibody responses
AUTHOR(S): Speidel, Katharina; Osen, Wolfram; Faath, Stefan; Hilgert, Ivan; Obst, Reinhard; Braspenning, Joris; Momburg, Frank; Hammerling, Gunter J.; Rammensee, Hans Georg
CORPORATE SOURCE: Department Tumorvirus Immunology, German Cancer Research Center, Heidelberg, Germany
SOURCE: Eur. J. Immunol. (1997), 27(9), 2391-2399
CODEN: EJIMAF; ISSN: 0014-2980
PUBLISHER: Wiley-VCH
DOCUMENT TYPE: Journal
LANGUAGE: English

TI Priming of cytotoxic T lymphocytes by five heat-aggregated antigens in vivo. Conditions, efficiency, and relation to antibody responses
SO Eur. J. Immunol. (1997), 27(9), 2391-2399
CODEN: EJIMAF; ISSN: 0014-2980
AU Speidel, Katharina; Osen, Wolfram; Faath, Stefan; Hilgert, Ivan; Obst, Reinhard; Braspenning, Joris; Momburg, Frank; Hammerling, Gunter J.; Rammensee, Hans Georg
AB Mice were immunized i.p. with sol. or heat-denatured protein antigens [ovalbumin, .beta.-galactosidase, or recombinant E7 protein of **human papilloma virus** type 16 (HBV)]. Heat-denatured (100.degree.) prepns. of these proteins were able to induce cytotoxic T lymphocytes (CTL) that recognize cells expressing the resp. genes, whereas native protein was either inefficient or required up to 30-fold higher doses. If the heat-treated proteins were sepd. into aggregated and sol. fractions by ultracentrifugation, only the aggregated fractions were able to induce specific CTL; this is probably because of the easier access to one of the major histocompatibility complex class I loading pathways for exogenous antigen. Addn. of the adjuvant Al(OH)3 (alum) to aggregated proteins abolished their ability to induce CTL; thus, a condition leading to a strong antibody response appeared to inhibit CTL induction. Interestingly, immunization with heat-denatured ovalbumin plus alum increased the IgM/IgG1 ratio compared to immunization with native ovalbumin and alum. Immunization of B6 mice transgenic for an HLA-A2/H-2Kb hybrid gene with heat-denatured, recombinant HPV 16-E7 protein induced Db-restricted CTL specific for the peptide 49-57 of E7, indicating that this epitope is immunodominant over any A2-restricted E7 epitope in these mice. A whole influenza virus prepn. heated to 100.degree. or even autoclaved was still able to induce virus-specific CTL and BALB/c spleen cells heated to 100.degree. could still cross-prime minor H-specific CTL in B6 mice, although with lower efficiency than fresh spleen cells. Thus, aggregated proteins can be considered as components for future **vaccines**.

L7 ANSWER 40 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1997:542348 CAPLUS
DOCUMENT NUMBER: 127:204459
TITLE: Novel methods of vaccination and **vaccines**

therefore comprising a nucleic acid encoding a first epitope and a peptide containing a second epitope

INVENTOR(S): Craig, Roger Kingdon
PATENT ASSIGNEE(S): Therexsys Limited, UK
SOURCE: PCT Int. Appl., 88 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9728818	A1	19970814	WO 1997-GB396	19970212
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
CA 2244110	AA	19970814	CA 1997-2244110	19970212
AU 9718005	A1	19970828	AU 1997-18005	19970212
AU 724716	B2	20000928		
EP 880360	A1	19981202	EP 1997-903448	19970212
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2000505802	T2	20000516	JP 1997-528316	19970212
AU 9862211	A1	19980908	AU 1998-62211	19980212
JP 2001512312	T2	20010821	JP 1998-535464	19980212

PRIORITY APPLN. INFO.:

GB 1996-2777	A	19960212
US 1996-16506	P	19960430
GB 1996-14548	A	19960711
US 1996-24116	P	19960816
WO 1997-GB396	W	19970212
US 1997-861432	A	19970521
US 1997-55657	P	19970814
WO 1998-GB424	W	19980212

TI Novel methods of vaccination and **vaccines** therefore comprising a nucleic acid encoding a first epitope and a peptide containing a second epitope

SO PCT Int. Appl., 88 pp.
CODEN: PIXXD2

IN Craig, Roger Kingdon

AB The invention relates to methods of and compns. for vaccinating a mammal against a disease, wherein a mixt. is administered which includes (i) a nucleic acid which encodes a first epitope and (ii) a peptide contg. a second epitope such that both of the nucleic acid and the second epitope are taken up by and the nucleic acid is expressed in a professional antigen presenting cell of the mammal, and the first and second epitopes are processed in the cell such that an immune response is elicited in the mammal to the epitopes. Demonstrated was expression of human glucocerebrosidase gene and MHC class II Ea gene locus control region (LCR) in cells of monocyte-macrophage lineage in transgenic mice. Discussed includes generation of transgenic mice expressing antigenic protein under MHC II LCR control, where the antigenic protein is Influenza nucleoprotein; Influenza hemagglutinin; HIV-1 tat, rev, nef, or gag gene products; hepatitis B virus core, envelope, S, pre-s and pX gene proteins;

human papilloma virus E1, E2, E7, E5 and E6 proteins; melanoma-specific MAGE-1 antigen, tyrosinase, Her2/neu protooncogene, and connexin 37 protein; hepatitis C virus NS3 and NS4 proteins.

L7 ANSWER 41 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1997:363242 CAPLUS
DOCUMENT NUMBER: 127:93876
TITLE: Immunogenic properties of **human papilloma virus** type 16 (HPV-16) E5 polypeptide
AUTHOR(S): Gill, Dilbinder; Cason, John; Punchard, Neville
CORPORATE SOURCE: Dep. Biology and Health Science, Faculty Applied Science, Univ. Luton, Luton, LU1 3JU, UK
SOURCE: Biochem. Soc. Trans. (1997), 25(2), 281S
CODEN: BCSTB5; ISSN: 0300-5127
PUBLISHER: Portland Press
DOCUMENT TYPE: Journal
LANGUAGE: English

TI Immunogenic properties of **human papilloma virus** type 16 (HPV-16) E5 polypeptide

SO Biochem. Soc. Trans. (1997), 25(2), 281S
CODEN: BCSTB5; ISSN: 0300-5127

AU Gill, Dilbinder; Cason, John; Punchard, Neville

AB HPV-16 is strongly assocd. with cervical carcinoma and many groups are working towards developing prophylactic and/or therapeutic **vaccines** to various HPV proteins. Since HPVs are difficult to propagate in vivo and in vitro models, a range of synthetic peptides corresponding to regions of HPV-16 E5 were constructed using solid-phase peptide synthesis. These peptides were used to investigate the immunogenicity of complete (aa 1-83) HPV-16 E5 open reading frame in female BALB/c mice with respect to its ability to induce specific antibodies.

7 ANSWER 46 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1996:718364 CAPLUS
DOCUMENT NUMBER: 126:2510
TITLE: **Human papilloma virus** 18 L1 and L2 proteins and DNA encoding them, recombinant yeast producing L1 and L2 and **vaccines** for prevention of papillomavirus infection
INVENTOR(S): Hofmann, Kathryn J.; Jansen, Kathrin U.; Neeper, Michael P.; Joyce, Joseph G.; George, Hugh A.
PATENT ASSIGNEE(S): Merck and Co., Inc., USA
SOURCE: PCT Int. Appl., 45 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9629413	A2	19960926	WO 1996-US3649	19960318
WO 9629413	A3	19961128		
W: AL, AM, AU, AZ, BB, BG, BR, BY, CA, CN, CZ, EE, GE, HU, IS, JP, KG, KR, KZ, LK, LR, LT, LV, MD, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, TJ, TM, TR, TT, UA, US, US, UZ, VN, AM, AZ, BY, KG, KZ				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
US 5820870	A	19981013	US 1995-409122	19950322
US 5840306	A	19981124	US 1995-408669	19950322
CA 2215834	AA	19960926	CA 1996-2215834	19960318
AU 9653141	A1	19961008	AU 1996-53141	19960318
AU 714533	B2	20000106		
EP 817851	A2	19980114	EP 1996-909743	19960318
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI				
CN 1185176	A	19980617	CN 1996-194121	19960318
JP 11502704	T2	19990309	JP 1996-528535	19960318
ZA 9602245	A	19960930	ZA 1996-2245	19960320
NO 9704322	A	19971124	NO 1997-4322	19970919

PRIORITY APPLN. INFO.:
US 1995-408669 19950322
US 1995-409122 19950322
WO 1996-US3649 19960318

TI **Human papilloma virus** 18 L1 and L2 proteins and DNA encoding them, recombinant yeast producing L1 and L2 and **vaccines** for prevention of papillomavirus infection
SO PCT Int. Appl., 45 pp.
CODEN: PIXXD2
IN Hofmann, Kathryn J.; Jansen, Kathrin U.; Neeper, Michael P.; Joyce, Joseph G.; George, Hugh A.
AB The title proteins and DNA, prodn. of L1 and L2 and yeast, and **vaccines** are claimed. The DNA for HPV18 L1 and L2 were cloned, sequenced, and expressed in Saccharomyces cerevisiae. To this end, S. cerevisiae MNN9 and PRB1 mutants were prepd.

L7 ANSWER 47 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1996:458139 CAPLUS
DOCUMENT NUMBER: 125:112749
TITLE: Variants of **human papilloma**

virus antigens
INVENTOR(S): Edwards, Stirling John; Cox, John Cooper; Webb, Elizabeth Ann; Frazer, Ian
PATENT ASSIGNEE(S): Csl Limited, Australia; University of Queensland
SOURCE: PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9619496	A1	19960627	WO 1995-AU868	19951220
W: AU, CA, JP, NZ, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2207741	AA	19960627	CA 1995-2207741	19951220
ZA 9510832	A	19960704	ZA 1995-10832	19951220
AU 9643229	A1	19960710	AU 1996-43229	19951220
AU 693627	B2	19980702		
EP 796273	A1	19970924	EP 1995-941988	19951220
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
JP 10510989	T2	19981027	JP 1995-519365	19951220
US 6004557	A	19971221	US 1997-860165	19970922

PRIORITY APPLN. INFO.: AU 1994-157 19941220
WO 1995-AU868 19951220

TI Variants of **human papilloma virus** antigens
SO PCT Int. Appl., 39 pp.
CODEN: PIXXD2
IN Edwards, Stirling John; Cox, John Cooper; Webb, Elizabeth Ann; Frazer, Ian
AB Variants of **human papilloma virus** (HPV) E6 and E7 proteins able to elicit a humoral and/or cellular immune response against HPV in a host animal but not being cell-transforming in the host animal are disclosed, and are useful in treatment or prevention of diseases or conditions involving HPV. Demonstrated in examples were cloning and expression of E6/E7 fusion proteins, immunogenicity of E6/E7hh protein, and transformation studies of E6/E7 gene construct.

L7 ANSWER 48 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1996:386041 CAPLUS
DOCUMENT NUMBER: 125:56218
TITLE: Chimeric papillomavirus-like particles containing L1 protein and L2 fusion protein for use as **vaccines**
INVENTOR(S): Lowy, Douglas R.; Schiller, John T.; Greenstone, Heather
PATENT ASSIGNEE(S): United States Dept. of Health and Human Services, USA
SOURCE: PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9611274	A1	19960418	WO 1995-US12914	19951006

W: AL, AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM
RW: KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

US 5618536	A	19970408	US 1994-319467	19941006
AU 9538284	A1	19960502	AU 1995-38284	19951006
EP 789766	A1	19970820	EP 1995-936278	19951006
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
JP 10506796	T2	19980707	JP 1995-512667	19951006
AU 9944479	A1	19991028	AU 1999-44479	19990813
AU 717932	B2	20000406		

PRIORITY APPLN. INFO.:	US 1994-319467	A	19941006
	US 1992-941371	A2	19920903
	US 1993-32869	A2	19930316
	AU 1995-38284	A3	19951006
	WO 1995-US12914	W	19951006

TI Chimeric papillomavirus-like particles containing L1 protein and L2 fusion protein for use as **vaccines**
SO PCT Int. Appl., 26 pp.
CODEN: PIXXD2
IN Lowy, Douglas R.; Schiller, John T.; Greenstone, Heather
AB The present invention provides a papillomavirus-like particle, characterized as having conformational epitopes, comprising a papillomavirus L1 product and a papillomavirus L2 fusion product; and related synthetic DNA mols., host cells, methods and **vaccines**. Prepn. of fusion protein HPV16L2-HPV16E7 comprised of L2 and E7 proteins of **human papilloma virus** 16 or other combination such as BPVL2-HPV16E7 was shown.

L7 ANSWER 49 OF 131 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER:	1996:276488 CAPLUS
DOCUMENT NUMBER:	124:340801
TITLE:	Priming in vivo and quantification in vitro of class I MHC-restricted cytotoxic T cells to **human papilloma virus** type 11 early proteins (E6 and E7) using immunostimulating complexes (ISCOMs)
AUTHOR(S):	Tarpey, Ian; Stacey, Simon N.; McIndoe, Angus; Davies, D. Huw
CORPORATE SOURCE:	Division Life Sciences, King's College, London, W8 7AH, UK
SOURCE:	Vaccine (1996), 14(3), 230-236 CODEN: VACCDE; ISSN: 0264-410X
DOCUMENT TYPE:	Journal
LANGUAGE:	English

TI Priming in vivo and quantification in vitro of class I MHC-restricted cytotoxic T cells to **human papilloma virus** type 11 early proteins (E6 and E7) using immunostimulating complexes (ISCOMs)
SO Vaccine (1996), 14(3), 230-236
CODEN: VACCDE; ISSN: 0264-410X
AU Tarpey, Ian; Stacey, Simon N.; McIndoe, Angus; Davies, D. Huw

AB Immunostimulating complexes (ISCOMs) efficiently deliver sol. antigen into both the cytosolic (endogenous) and endosomal (exogenous) pathways of antigen processing. Cytosolic delivery to antigen-presenting cells (APCs) may therefore be useful for the stimulation and assay of class I major histocompatibility complex (MHC)-restricted cytotoxic T lymphocytes (CTL) in vitro. In this study, mice were immunized with ISCOMs contg. fusion proteins of the E6 or E7 early proteins of **human papilloma virus** type 11 (HPV 11) to elicit CTL. These CTL were then restimulated in vitro using APCs pulsed with the same ISCOMs, prior to cytotoxicity assay using syngeneic target cells infected with recombinant vaccinia viruses. In this way, antigen-specific, MHC-restricted lysis by CD8+ cells was detected. However, this was dependent on the use of low d. splenocytes as APCs for restimulation in vitro. Limiting diln. analyses showed a direct correlation between the CTL responder frequency and the no. of times the animals were immunized in vivo. We conclude that in lieu of infectious virus, the use of ISCOMs to mediate antigen delivery to APCs in vitro can be used to quantitate CTL activity. This may have applications in monitoring **vaccine** efficacy, particularly to viruses such as HPV, which cannot be presently obtained as infectious virus in sufficient quantity for CTL propagation and assay.

L7 ANSWER 50 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1996:275957 CAPLUS
DOCUMENT NUMBER: 124:340141
TITLE: **Vaccines** against human papillomaviruses and associated tumors
AUTHOR(S): Crawford, Lionel
CORPORATE SOURCE: Department Pathology, University Cambridge, Cambridge, CB2 1QP, UK
SOURCE: DNA Tumor Viruses (1995), 157-169. Editor(s): Barbanti-Brodano, Giuseppe; Bendinelli, Mauro; Friedman, Herman. Plenum: New York, N. Y. CODEN: 62TIA5
DOCUMENT TYPE: Conference; General Review
LANGUAGE: English
TI **Vaccines** against human papillomaviruses and associated tumors
SO DNA Tumor Viruses (1995), 157-169. Editor(s): Barbanti-Brodano, Giuseppe; Bendinelli, Mauro; Friedman, Herman. Publisher: Plenum, New York, N. Y. CODEN: 62TIA5
AU Crawford, Lionel
AB A review with 25 refs. Discussed are: infection by human papillomaviruses (HPV); transformation and tumorigenesis; immune response to HPV infection; requirements for generation of cell-mediated immunity; prophylactic **vaccines**; therapeutic **vaccines**; delivery; validation of **vaccine** efficacy; and **vaccine** trials.

L7 ANSWER 51 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1996:275080 CAPLUS
DOCUMENT NUMBER: 124:307566
TITLE: Method of treating papilloma virus infection using hypericin
INVENTOR(S): Meruelo, Daniel; Lavie, Gad

PATENT ASSIGNEE(S): New York University, USA
SOURCE: U.S., 20 pp. Cont.-in-part of U.S. Ser. No. 821,945, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5506271	A	19960409	US 1993-103775	19930810
PRIORITY APPLN. INFO.:			US 1992-821945	19920116

TI Method of treating papilloma virus infection using hypericin
SO U.S., 20 pp. Cont.-in-part of U.S. Ser. No. 821,945, abandoned.
CODEN: USXXAM
IN Meruelo, Daniel; Lavie, Gad
AB A method for treating a papilloma virus infection comprises topically administering hypericin which is effective to inhibit the replication, growth and/or the infectivity of the virus. The papilloma viruses include those capable of causing benign warts or a malignancy such as **human papilloma virus**-1 (HPV-1), HPV-2, HPV-6, HPV-11, HPV-16 and HPV-18. Vaccination with hypericin-inactivated virus, time course of hypericin-inactivated treatment for immunogenic virus, and comparison of virus-inactivating and immunogenicity-enhancing properties of hypericin and rose bengal are described, as is efficacy of hypericin in treatment of warts of a human subject.

L7 ANSWER 60 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1995:713944 CAPLUS
DOCUMENT NUMBER: 123:93251
TITLE: **vaccines** for **human papilloma virus**-induced uterine cervix cancer
INVENTOR(S): Nokihara, Seishi; Takiguchi, Masafumi
PATENT ASSIGNEE(S): Nokihara Seishi, Japan; Takiguchi Masafumi
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07126289	A2	19950516	JP 1993-297378	19931102
JP 09188695	A2	19970722	JP 1996-220327	19931102

PRIORITY APPLN. INFO.: JP 1993-297378 19931102

TI **vaccines** for **human papilloma virus**-induced uterine cervix cancer
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
IN Nokihara, Seishi; Takiguchi, Masafumi
AB **Vaccines** for **human papilloma virus**-induced uterine cervix cancer contain peptides selected form FPFDENGNPVY and 11 other peptides of **human papilloma virus** origin. The peptides can be synthesized. The peptides bind to HLA-B35 antigen to affect allorecognition of cancer cells by cytotoxic T cells.

ACCESSION NUMBER: 1994:602669 CAPLUS
DOCUMENT NUMBER: 121:202669
TITLE: T cell epitopes in **human papilloma virus** proteins
AUTHOR(S): Sadovnikova, E.; Stauss, H. J.
CORPORATE SOURCE: Tumour Immunology Group, Imperial Cancer Research Fund, London, W1P 8BT, UK
SOURCE: Behring Inst. Mitt. (1994), 94, 87-93
CODEN: BHIMA2; ISSN: 0301-0457
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

TI T cell epitopes in **human papilloma virus** proteins
SO Behring Inst. Mitt. (1994), 94, 87-93
CODEN: BHIMA2; ISSN: 0301-0457
AU Sadovnikova, E.; Stauss, H. J.
AB A review with 18 refs. Infection by HPV is assocd. with several human diseases such as warts of the skin, condylomata of the genital track and carcinoma of the cervix. Although there is strong evidence for immune control of HPV types causing warts and condylomata, it is currently unclear whether patients infected with transforming HPV types can mount efficient T cell responses. Despite the apparent low immunogenicity of transforming HPV types, several Th and CTL epitopes have been identified in proteins derived from HPV16. This transforming virus is most frequently present in women with CIN and cervical carcinoma and knowledge of T cell recognizable proteins may eventually lead to the design of immune-stimulating anti-HPV16 **vaccines**

L7 ANSWER 72 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1994:28841 CAPLUS
DOCUMENT NUMBER: 120:28841
TITLE: Vaccination with cytotoxic T lymphocyte epitope-containing peptide protects against a tumor induced by human papillomavirus type 16-transformed cells
AUTHOR(S): Feltkamp, Mariet C. W.; Smits, Henk L.; Vierboom, Michel P. M.; Minnaar, Rene P.; de Jongh, Barteld M.; Drijfhout, Jan Wouter; ter Schegget, Jan; Melief, Cornelis J. M.; Kast, W. Martin
CORPORATE SOURCE: Dep. Immunohematol. Blood Bank, Univ. Hosp. Leiden, Leiden, 2300 RC, Neth.
SOURCE: Eur. J. Immunol. (1993), 23(9), 2242-9
CODEN: EJIMAF; ISSN: 0014-2980
DOCUMENT TYPE: Journal
LANGUAGE: English

TI Vaccination with cytotoxic T lymphocyte epitope-containing peptide protects against a tumor induced by human papillomavirus type 16-transformed cells

SO Eur. J. Immunol. (1993), 23(9), 2242-9
CODEN: EJIMAF; ISSN: 0014-2980

AU Feltkamp, Mariet C. W.; Smits, Henk L.; Vierboom, Michel P. M.; Minnaar, Rene P.; de Jongh, Barteld M.; Drijfhout, Jan Wouter; ter Schegget, Jan; Melief, Cornelis J. M.; Kast, W. Martin

AB Cytotoxic T lymphocyte (CTL) peptide epitopes can be used for immunization of mice against lethal virus infection. To study whether this approach can be successful against virus-induced tumors the authors generated a B6 (H-2b) tumorigenic cell line transformed by human papillomavirus (HPV). This virus is detected in over 90% of all human cervical cancers. To identify **vaccine** candidates, the authors generated a set of 240 overlapping peptides derived from the HPV type 16 (HPV16) oncogenes E6 and E7. These peptides were tested for their ability to bind H-2Kb and H-2Db MHC class I mols. Binding peptides were compared with the presently known peptide-binding motifs for H-2Kb and H-2Db and the predictive value of these motifs is discussed. The high-affinity H-2Db-binding peptide and putative CTL epitope E7 49-57 (RAHYNIVTF) was used in vaccination studies against HPV 16-transformed tumor cells. Immunization with peptide E7 49-57 rendered mice insensitive to a subsequent challenge with HPV 16-transformed tumor cells in vivo, and induced a CTL response which lysed the tumor cells in vitro.

L7 ANSWER 72 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1994:28841 CAPLUS
DOCUMENT NUMBER: 120:28841
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AUTHOR(S): Feltkamp, Mariet C. W.; Smits, Henk L.; Vierboom, Michel P. M.; Minnaar, Rene P.; de Jongh, Barteld M.; Drijfhout, Jan Wouter; ter Schegget, Jan; Melief, Cornelis J. M.; Kast, W. Martin
CORPORATE SOURCE: Dep. Immunohematol. Blood Bank, Univ. Hosp. Leiden, Leiden, 2300 RC, Neth.
SOURCE: Eur. J. Immunol. (1993), 23(9), 2242-9
CODEN: EJIMAF; ISSN: 0014-2980
DOCUMENT TYPE: Journal
LANGUAGE: English
TI Vaccination with cytotoxic T lymphocyte epitope-containing peptide protects against a tumor induced by human papillomavirus type 16-transformed cells
SO Eur. J. Immunol. (1993), 23(9), 2242-9
CODEN: EJIMAF; ISSN: 0014-2980
AU Feltkamp, Mariet C. W.; Smits, Henk L.; Vierboom, Michel P. M.; Minnaar, Rene P.; de Jongh, Barteld M.; Drijfhout, Jan Wouter; ter Schegget, Jan; Melief, Cornelis J. M.; Kast, W. Martin
AB Cytotoxic T lymphocyte (CTL) peptide epitopes can be used for immunization of mice against lethal virus infection. To study whether this approach can be successful against virus-induced tumors the authors generated a B6 (H-2b) tumorigenic cell line transformed by human papillomavirus (HPV). This virus is detected in over 90% of all human cervical cancers. To identify **vaccine** candidates, the authors generated a set of 240 overlapping peptides derived from the HPV type 16 (HPV16) oncogenes E6 and E7. These peptides were tested for their ability to bind H-2Kb and H-2Db MHC class I mols. Binding peptides were compared with the presently known peptide-binding motifs for H-2Kb and H-2Db and the predictive value of these motifs is discussed. The high-affinity H-2Db-binding peptide and putative CTL epitope E7 49-57 (RAHYNIVTF) was used in vaccination studies against HPV 16-transformed tumor cells. Immunization with peptide E7 49-57 rendered mice insensitive to a subsequent challenge with HPV 16-transformed tumor cells in vivo, and induced a CTL response which lysed the tumor cells in vitro.

L7 ANSWER 73 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1993:493513 CAPLUS
DOCUMENT NUMBER: 119:93513
TITLE: Seroreactive domains from the HPV 16 E1 and E2 proteins
INVENTOR(S): Mueller, Martin; Gissmann, Lutz
PATENT ASSIGNEE(S): Behringwerke AG, Germany
SOURCE: Eur. Pat. Appl., 20 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 523395	A2	19930120	EP 1992-110430	19920620
EP 523395	A3	19941214		
R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, LU, NL, PT, SE				
DE 4123760	A1	19930121	DE 1991-4123760	19910718
DE 4123760	C2	20000120		
CA 2074153	AA	19930119	CA 1992-2074153	19920717
AU 9220429	A1	19930121	AU 1992-20429	19920717
AU 668094	B2	19960426		
JP 08067696	A2	19960312	JP 1992-214489	19920720
US 5601973	A	19970211	US 1994-237418	19940503
US 6221577	B1	20010424	US 1995-468337	19950606

PRIORITY APPLN. INFO.: DE 1991-4123760 A 19910718
US 1992-913613 B1 19920716
US 1994-237418 A3 19940503

TI Seroreactive domains from the HPV 16 E1 and E2 proteins

SO Eur. Pat. Appl., 20 pp.
CODEN: EPXXDW

IN Mueller, Martin; Gissmann, Lutz

AB Peptides corresponding to seroreactive domains on proteins E1 and E2 of **human papilloma virus** 16 (HPV 16) are useful in manufg. **vaccines** against HPV 16, in diagnostic immunoassays for detection of antibodies to HPV 16, and for prodn. of monoclonal antibodies for detection of proteins E1 and E2. Thus, phage fd expression libraries for HPV 16 DNA were screened with rabbit polyclonal antisera to protein E1-MS2 polymerase fusion protein to identify seroreactive domains on E1.

L7 ANSWER 73 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1993:493513 CAPLUS
DOCUMENT NUMBER: 119:93513
TITLE: Seroreactive domains from the HPV 16 E1 and E2 proteins
INVENTOR(S): Mueller, Martin; Gissmann, Lutz
PATENT ASSIGNEE(S): Behringwerke AG, Germany
SOURCE: Eur. Pat. Appl., 20 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 523395	A2	19930120	EP 1992-110430	19920620
EP 523395	A3	19941214		
R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, LU, NL, PT, SE				
DE 4123760	A1	19930121	DE 1991-4123760	19910718
DE 4123760	C2	20000120		
CA 2074153	AA	19930119	CA 1992-2074153	19920717
AU 9220429	A1	19930121	AU 1992-20429	19920717
AU 668094	B2	19960426		
JP 08067696	A2	19960312	JP 1992-214489	19920720
US 5601973	A	19970211	US 1994-237418	19940503
US 6221577	B1	20010424	US 1995-468337	19950606

PRIORITY APPLN. INFO.: DE 1991-4123760 A 19910718
US 1992-913613 B1 19920716
US 1994-237418 A3 19940503

TI Seroreactive domains from the HPV 16 E1 and E2 proteins
SO Eur. Pat. Appl., 20 pp.
CODEN: EPXXDW
IN Mueller, Martin; Gissmann, Lutz
AB Peptides corresponding to seroreactive domains on proteins E1 and E2 of **human papilloma virus** 16 (HPV 16) are useful in manufg. **vaccines** against HPV 16, in diagnostic immunoassays for detection of antibodies to HPV 16, and for prodn. of monoclonal antibodies for detection of proteins E1 and E2. Thus, phage fd expression libraries for HPV 16 DNA were screened with rabbit polyclonal antisera to protein E1-MS2 polymerase fusion protein to identify seroreactive domains on E1.

L7 ANSWER 74 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1993:118261 CAPLUS
DOCUMENT NUMBER: 118:118261
TITLE: Recombinant virus vectors encoding human papillomavirus proteins as immunotherapeutics or **vaccines**
INVENTOR(S): Boursnell, Michael Edward Griffith; Inglis, Stephen Charles; Munro, Alan James
PATENT ASSIGNEE(S): Immunology Ltd., UK
SOURCE: PCT Int. Appl., 88 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9216636	A1	19921001	WO 1992-GB424	19920310
W: AT, AU, BB, BG, BR, CA, CH, CS, DE, DK, ES, FI, GB, HU, JP, KP, KR, LK, LU, MG, MN, MW, NL, NO, PL, RO, RU, SD, SE, US				
RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FR, GA, GB, GN, GR, IT, LU, MC, ML, MR, NL, SE, SN, TD, TG				
CA 2106069	AA	19920915	CA 1992-2106069	19920310
AU 9214147	A1	19921021	AU 1992-14147	19920310
AU 665531	B2	19960111		
EP 576471	A1	19940105	EP 1992-906294	19920310
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, MC, NL, SE				
BR 9205771	A	19940607	BR 1992-5771	19920310
JP 06505626	T2	19940630	JP 1992-505584	19920310
CN 1064892	A	19920930	CN 1992-101747	19920314
NO 9303260	A	19931022	NO 1993-3260	19930913
US 5719054	A	19980217	US 1993-117083	19931108
PRIORITY APPLN. INFO.:			GB 1991-5383	19910314
			WO 1992-GB424	19920310

TI Recombinant virus vectors encoding human papillomavirus proteins as immunotherapeutics or **vaccines**

SO PCT Int. Appl., 88 pp.
CODEN: PIXXD2

IN Boursnell, Michael Edward Griffith; Inglis, Stephen Charles; Munro, Alan James

AB A recombinant virus contg. .gtoreq.1 pair of genes for heterologous proteins, which genes are homologous enough to allow inter-typic recombination to occur, is described. The two genes are inverted with respect to each other to reduce the likelihood of recombination and loss of some or all of these genes. The recombinant virus can be used as an immunotherapeutic or **vaccine**. The E6 and E7 open reading frames (ORF) of human papillomavirus types 16 (HPV16) and 18 (HPV18) were cloned and modified to reduce inter-typic recombination (by changing sites where homol. of E6/7 was greatest but leaving the amino acid sequence unaltered). The E7 ORF of both viruses were further mutagenized to abolish their potential to immortalize host cells. The modified E6 and E7 ORF of each virus were fused and arranged into a neutral site of a vaccinia virus vector so that they are inverted each other, with each E6-E7 fusion expressed from resp. promoters, i.e. the p7.5 and H6 promoters of vaccinia virus. The recombinant vaccinia virus vector expressing the E6 and E7 proteins can be used as **vaccine** against HPV-assocd. diseases, e.g. cervical cancer.

L7 ANSWER 74 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1993:118261 CAPLUS
DOCUMENT NUMBER: 118:118261
TITLE: Recombinant virus vectors encoding human papillomavirus proteins as immunotherapeutics or **vaccines**
INVENTOR(S): Boursnell, Michael Edward Griffith; Inglis, Stephen Charles; Munro, Alan James
PATENT ASSIGNEE(S): Immunology Ltd., UK
SOURCE: PCT Int. Appl., 88 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9216636	A1	19921001	WO 1992-GB424	19920310
W: AT, AU, BB, BG, BR, CA, CH, CS, DE, DK, ES, FI, GB, HU, JP, KP, KR, LK, LU, MG, MN, MW, NL, NO, PL, RO, RU, SD, SE, US				
RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FR, GA, GB, GN, GR, IT, LU, MC, ML, MR, NL, SE, SN, TD, TG				
CA 2106069	AA	19920915	CA 1992-2106069	19920310
AU 9214147	A1	19921021	AU 1992-14147	19920310
AU 665531	B2	19960111		
EP 576471	A1	19940105	EP 1992-906294	19920310
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, MC, NL, SE				
BR 9205771	A	19940607	BR 1992-5771	19920310
JP 06505626	T2	19940630	JP 1992-505584	19920310
CN 1064892	A	19920930	CN 1992-101747	19920314
NO 9303260	A	19931022	NO 1993-3260	19930913
US 5719054	A	19980217	US 1993-117083	19931108
PRIORITY APPLN. INFO.:			GB 1991-5383	19910314
			WO 1992-GB424	19920310

TI Recombinant virus vectors encoding human papillomavirus proteins as immunotherapeutics or **vaccines**
SO PCT Int. Appl., 88 pp.
CODEN: PIXXD2
IN Boursnell, Michael Edward Griffith; Inglis, Stephen Charles; Munro, Alan James
AB A recombinant virus contg. .gtoreq.1 pair of genes for heterologous proteins, which genes are homologous enough to allow inter-typic recombination to occur, is described. The two genes are inverted with respect to each other to reduce the likelihood of recombination and loss of some or all of these genes. The recombinant virus can be used as an immunotherapeutic or **vaccine**. The E6 and E7 open reading frames (ORF) of human papillomavirus types 16 (HPV16) and 18 (HPV18) were cloned and modified to reduce inter-typic recombination (by changing sites where homol. of E6/7 was greatest but leaving the amino acid sequence unaltered). The E7 ORF of both viruses were further mutagenized to abolish their potential to immortalize host cells. The modified E6 and E7
ORF of each virus were fused and arranged into a neutral site of a vaccinia virus vector so that they are inverted each other, with each E6-E7 fusion expressed from resp. promoters, i.e. the p7.5 and H6 promoters of vaccinia virus. The recombinant vaccinia virus vector expressing the E6 and E7 proteins can be used as **vaccine** against HPV-assocd. diseases, e.g. cervical cancer.

7 ANSWER 75 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1993:37211 CAPLUS
DOCUMENT NUMBER: 118:37211
TITLE: Induction of cytotoxic T lymphocytes with peptides in vitro: Identification of candidate T-cell epitopes in
human papilloma virus
AUTHOR(S): Strauss, Hans J.; Davies, Huw; Sadovnikova, Elena; Chain, Benny; Horowitz, Neil; Sinclair, Christine
CORPORATE SOURCE: Imp. Cancer Res. Fund, Univ. Coll., London, UK
SOURCE: Proc. Natl. Acad. Sci. U. S. A. (1992), 89(17), 7871-5
CODEN: PNASA6; ISSN: 0027-8424
DOCUMENT TYPE: Journal
LANGUAGE: English
TI Induction of cytotoxic T lymphocytes with peptides in vitro: Identification of candidate T-cell epitopes in **human papilloma virus**
SO Proc. Natl. Acad. Sci. U. S. A. (1992), 89(17), 7871-5
CODEN: PNASA6; ISSN: 0027-8424
AU Strauss, Hans J.; Davies, Huw; Sadovnikova, Elena; Chain, Benny; Horowitz, Neil; Sinclair, Christine
AB A set of overlapping peptides corresponding to the L1, E6, and E7 proteins of **human papilloma virus** 16 was tested for their ability to bind to major histocompatibility complex class I mols. and to stimulate cytotoxic T-lymphocyte (CTL) responses in vitro. A class I binding assay using intact RMA-S cells showed that 20 of the 99 **human papilloma virus** peptides bound to H-2Kb and/or Db mols. Fifteen of the 20 class I-binding peptides stimulated primary CTL responses, whereas peptides that were neg. in the binding assay failed to do so. Peptide-induced CTLs recognized the immunizing peptide very efficiently, requiring no more than 1-10 nM peptide for target cell lysis. However, 2 observations were made that have important implications for the design of peptide-based **vaccines** for inducing CTLs. Not all major histocompatibility complex-binding peptides that contained known motifs characteristic of naturally processed peptides induced CTLs. The efficiency of CTL lysis was strongly decreased when the size of the target peptide differed by only 1 amino acid residue from that of the immunizing peptide. Thus, peptides chosen for vaccination must correspond in length to naturally processed peptides.

L7 ANSWER 76 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1992:590111 CAPLUS
DOCUMENT NUMBER: 117:190111
TITLE: **Human papilloma virus** peptides and organisms producing said peptides for use in **vaccine** compositions
INVENTOR(S): Thomas, Elaine Kinney; Chen, Lieping; Blake, James; Hellstrom, Karl Erik; Hellstrom, Ingegerd; Hu, Shiu Lok
PATENT ASSIGNEE(S): Bristol-Myers Squibb Co., USA
SOURCE: PCT Int. Appl., 82 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9205248	A1	19920402	WO 1991-US7081	19910926
W: AU, CA, JP, KR, NO				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
AU 9187629	A1	19920415	AU 1991-87629	19910926
CN 1067382	A	19921230	CN 1991-110657	19910926
PRIORITY APPLN. INFO.:			US 1990-588384	19900926
			WO 1991-US7081	19910926

TI **Human papilloma virus** peptides and organisms producing said peptides for use in **vaccine** compositions
SO PCT Int. Appl., 82 pp.
CODEN: PIXXD2
IN Thomas, Elaine Kinney; Chen, Lieping; Blake, James; Hellstrom, Karl Erik; Hellstrom, Ingegerd; Hu, Shiu Lok
AB Immunogenic peptides corresponding to peptides expressed in mammalian cells in response to **human papilloma virus** (HPV) infection are described. Recombinant organisms (such as vaccinia virus or tumor cells) producing such a peptide, or the peptide, can be used to treat HPV infections. Recombinant vaccinia virus expressing either the HPV E7 or E6 gene, and mammalian cell expression plasmids contg. these genes, were prepd. Mice were injected i.p. with HPV E7 epitope-producing fibroblasts, then challenged by s.c. administration of a tumorigenic dose of M2 melanoma cells transfected with HPV16 E7 expression vector. A transient development of tumors followed by tumor regression was obsd.

L7 ANSWER 77 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1992:405675 CAPLUS
DOCUMENT NUMBER: 117:5675
TITLE: Delivery and expression of a heterologous antigen on the surface of streptococci
AUTHOR(S): Pozzi, Gianni; Contorni, Mario; Oggioni, Marco R.; Manganelli, Riccardo; Tommasino, Massimo; Cavalieri, Filippo; Fischetti, Vincent A.
CORPORATE SOURCE: Dip. Biol. Mol., Univ. Siena, Siena, 53100, Italy
SOURCE: Infect. Immun. (1992), 60(5), 1902-7
CODEN: INFIBR; ISSN: 0019-9567
DOCUMENT TYPE: Journal
LANGUAGE: English
TI Delivery and expression of a heterologous antigen on the surface of streptococci
SO Infect. Immun. (1992), 60(5), 1902-7
CODEN: INFIBR; ISSN: 0019-9567
AU Pozzi, Gianni; Contorni, Mario; Oggioni, Marco R.; Manganelli, Riccardo; Tommasino, Massimo; Cavalieri, Filippo; Fischetti, Vincent A.
AB A system was developed in which a foreign antigen replaces nearly all of the surface-exposed region of the fibrillar M protein from Streptococcus pyogenes and is fused to the C-terminal attachment motif of the M mol. The fusion protein is thus expressed on the surface of S. gordonii, a commensal organism of the oral cavity. The antigen chosen to be expressed within the context of the M6 mol. was the E7 protein (98 amino acids) of

human papilomavirus type 16. Stable recombinant streptococci were obtained by integrating genetic constructs into the chromosome, exploiting in vivo homologous recombination. The M6-E7 fusion protein expressed on the S. gordonii surface was shown to be immunogenic in mice. This is the first step in the construction of recombinant live **vaccines** in which nonpathogenic streptococci as well as other gram-pos. bacteria may be used as vectors to deliver heterologous antigens to the immune system.

L7 ANSWER 78 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1992:192475 CAPLUS
DOCUMENT NUMBER: 116:192475
TITLE: Seroreactive epitopes of human papillomavirus (HPV) 16 proteins
INVENTOR(S): Mueller, Martin; Gissmann, Lutz
PATENT ASSIGNEE(S): Behringwerke A.-G., Germany
SOURCE: Eur. Pat. Appl., 15 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 451550	A2	19911016	EP 1991-104197	19910319
EP 451550	A3	19911106		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
CA 2038581	AA	19910921	CA 1991-2038581	19910319
AU 9173515	A1	19910926	AU 1991-73515	19910319
AU 650868	B2	19940707		
JP 04217998	A2	19920807	JP 1991-81596	19910320

PRIORITY APPLN. INFO.: EP 1990-105222 19900320
TI Seroreactive epitopes of human papillomavirus (HPV) 16 proteins
SO Eur. Pat. Appl., 15 pp.
CODEN: EPXXDW
IN Mueller, Martin; Gissmann, Lutz
AB Seroreactive epitopes of HPV16 proteins E4, E6, E7, and L1 are identified.
Also provided are peptides contg. these epitopes. The peptides of the invention are useful for a **vaccine** and a diagnostic kit.
Epitope and peptide sequences are included.

L7 ANSWER 79 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1992:150000 CAPLUS
DOCUMENT NUMBER: 116:150000
TITLE: Seroreactive epitopes from proteins of **human papilloma virus** 18
INVENTOR(S): Bleul, Conrad; Gissmann, Lutz; Mueller, Martin
PATENT ASSIGNEE(S): Behringwerke A.-G., Germany
SOURCE: Eur. Pat. Appl., 8 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

EP 456197	A1	19911113	EP 1991-107423	19910507	
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE					
DE 4015044	A1	19911114	DE 1990-4015044	19900510	
AU 9176212	A1	19911114	AU 1991-76212	19910429	
AU 650648	B2	19940630			
CA 2042236	AA	19911111	CA 1991-2042236	19910509	
JP 04227000	A2	19920817	JP 1991-135751	19910510	
JP 2001017190	A2	20010123	JP 2000-171081	19910510	
JP 2001026600	A2	20010130	JP 2000-170971	19910510	
US 5753233	A	19980519	US 1995-466285	19950606	
PRIORITY APPLN. INFO.:			DE 1990-4015044	A	19900510
			US 1991-696953	B1	19910508
			JP 1991-135751	A3	19910510
			US 1992-947992	B1	19920921
			US 1993-164768	A3	19931210

TI Seroreactive epitopes from proteins of **human papilloma virus** 18
SO Eur. Pat. Appl., 8 pp.
CODEN: EPXXDW
IN Bleul, Conrad; Gissmann, Lutz; Mueller, Martin
AB Seroreactive epitopes form proteins E1, E6, and E7 of **human papilloma virus** (hpv) 18 are described. They can be used as **vaccines** and for diagnosis of hpv 18 infection (no data). The DNA encoding hpv 18 proteins E1, E6, and E7 was cloned in Escherichia coli. Based on the sequences of these genes, peptide subfragments of the proteins were synthesized and tested with anti-E1, E6, and E7 antibodies to identify epitopes.

L7 ANSWER 80 OF 131 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER:	1991:651998 CAPLUS
DOCUMENT NUMBER:	115:251998
TITLE:	Expression of vaccinia recombinant HPV 16 L1 and L2 ORF proteins in epithelial cells is sufficient for assembly of HPV virion-like particles
AUTHOR(S):	Zhou, Jian; Sun, Xiao Yi; Stenzel, Deborah J.; Frazer, Ian H.
CORPORATE SOURCE:	Lions Hum. Immunol., Princess Alexandra Hosp., Brisbane, 4102, Australia
SOURCE:	Virology (1991), 185(1), 251-7 CODEN: VIRLAX; ISSN: 0042-6822
DOCUMENT TYPE:	Journal
LANGUAGE:	English

TI Expression of vaccinia recombinant HPV 16 L1 and L2 ORF proteins in epithelial cells is sufficient for assembly of HPV virion-like particles
SO Virology (1991), 185(1), 251-7
CODEN: VIRLAX; ISSN: 0042-6822
AU Zhou, Jian; Sun, Xiao Yi; Stenzel, Deborah J.; Frazer, Ian H.
AB A recombinant vaccinia virus termed pLC201VV was designed to coexpress the L1 and L2 late genes of human papillomavirus type 16 (HPV16). Synthesis of the L1 and L2 proteins occurred in cells infected with pLC201VV, and 40-nm virus-like particles with a d. of 1.31 g/mL were produced in the nucleic of cells synthesizing both L1 and L2, but not in cells synthesizing either protein alone. Virus-like particles were partially purified from infected cells by sucrose gradient sedimentation and shown to consist of capsomeres similar to HPV and contain glycosylated L1 viral capsid protein. The prodn. of HPV-like particles using recombinant vaccinia virus should be useful for biochem. studies and could provide a

safe source of material for the development of a **vaccine**.

L7 ANSWER 81 OF 131 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1991:556934 CAPLUS
DOCUMENT NUMBER: 115:156934
TITLE: Immunogenic domains of the E-7 protein of the **human papilloma virus** type 16
INVENTOR(S): Bartsch, Dusan; Gissmann, Lutz; Mueller, Martin
PATENT ASSIGNEE(S): Behringwerke A.-G., Fed. Rep. Ger.
SOURCE: Eur. Pat. Appl., 3 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 386734	A2	19900912	EP 1990-104353	19900307
EP 386734	A3	19920304		
EP 386734	B1	19950920		
R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, LU, NL, SE				
DE 3907721	A1	19900920	DE 1989-3907721	19890310
AT 128144	E	19951015	AT 1990-104353	19900307
ES 2078255	T3	19951216	ES 1990-104353	19900307
AU 9051104	A1	19900913	AU 1990-51104	19900308
AU 624485	B2	19920611		
CA 2011878	AA	19900910	CA 1990-2011878	19900309
JP 02289600	A2	19901129	JP 1990-59801	19900309
JP 3056502	B2	20000626		
US 5547846	A	19960820	US 1994-292169	19940816

PRIORITY APPLN. INFO.: DE 1989-3907721 A 19890310
US 1990-490444 B1 19900308
US 1993-144503 B1 19931102

TI Immunogenic domains of the E-7 protein of the **human papilloma virus** type 16
SO Eur. Pat. Appl., 3 pp.
CODEN: EPXXDW
IN Bartsch, Dusan; Gissmann, Lutz; Mueller, Martin
AB Five immunogenic peptides, downstream from nucleotide 595 of the genome of **human papilloma virus** 16 (HPV-16), are described. The peptides are used as **vaccines**, diagnostic agents, or for the manuf. of poly- and/or monoclonal antibodies to HPV-16.
The smallest peptide is Met-Leu-Asp-Leu-Gln-Pro-Glu-Thr.

L7 ANSWER 91 OF 131 BIOSIS COPYRIGHT 2001 BIOSIS
ACCESSION NUMBER: 2001:340855 BIOSIS
DOCUMENT NUMBER: PREV200100340855
TITLE: **Human papilloma virus vaccine** with disassembled and reassembled virus-like particles.
AUTHOR(S): Volkin, David B.; Mach, Henryk (1); Shi, Li
CORPORATE SOURCE: (1) Ambler, PA USA
ASSIGNEE: Merck & Co., Inc.
PATENT INFORMATION: US 6245568 June 12, 2001
SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (June 12, 2001) Vol. 1247, No. 2, pp. No Pagination. e-file.
ISSN: 0098-1133.
DOCUMENT TYPE: Patent
LANGUAGE: English
TI **Human papilloma virus vaccine** with disassembled and reassembled virus-like particles.
SO Official Gazette of the United States Patent and Trademark Office Patents,
(June 12, 2001) Vol. 1247, No. 2, pp. No Pagination. e-file.
ISSN: 0098-1133.
AU Volkin, David B.; Mach, Henryk (1); Shi, Li
AB Human Papillomavirus **vaccine** formulations which contain virus-like particles (VLPs) can be made more stable and have an enhanced shelf-life, by treating the VLPs to a disassembly and reassembly process. Also provided are formulation buffers to long term stable storage of VLPs

7 ANSWER 102 OF 131 BIOSIS COPYRIGHT 2001 BIOSIS
ACCESSION NUMBER: 1999:309690 BIOSIS
DOCUMENT NUMBER: PREV199900309690
TITLE: Induction of HPV16 capsid protein-specific human T cell responses by virus-like particles.
AUTHOR(S): Rudolf, Michael P.; Nieland, John D.; DaSilva, Diane M.; Velders, Markwin P.; Muller, Martin; Greenstone, Heather L.; Schiller, John T.; Kast, W. Martin (1)
CORPORATE SOURCE: (1) Cancer Immunology Program, Cardinal Bernardin Cancer Center, Loyola University of Chicago, 2160 S. First Avenue, Maywood, IL, 60153 USA
SOURCE: Biological Chemistry, (March, 1999) Vol. 380, No. 3, pp. 335-340.
ISSN: 1431-6730.
DOCUMENT TYPE: Article
LANGUAGE: English
SUMMARY LANGUAGE: English
TI Induction of HPV16 capsid protein-specific human T cell responses by virus-like particles.
SO Biological Chemistry, (March, 1999) Vol. 380, No. 3, pp. 335-340.
ISSN: 1431-6730.
AU Rudolf, Michael P.; Nieland, John D.; DaSilva, Diane M.; Velders, Markwin P.; Muller, Martin; Greenstone, Heather L.; Schiller, John T.; Kast, W. Martin (1)
AB It has been postulated that upon binding to a cell surface receptor, papilloma virus-like particles (VLPs) gain entry into the cytosol of infected cells and the capsid proteins L1 and L2 can be processed in the MHC class I presentation pathway. Vaccination of mice with **human papilloma virus**-like particles consisting of capsid proteins L1 and L2 induced a CD8-mediated and perforin dependent protective immune response against a tumor challenge with **human papilloma virus** transformed tumor cells, which express only minute amounts of L1 protein. Here we show that HPV16 capsid proteins stimulate a MHC class I restricted CTL response with human peripheral blood lymphocytes (PBL) in vitro. The vigorous response was specific for VLP-infected target cells and was MHC class I restricted. Moreover we show the presence of at least one HLA-A*0201 restricted CTL epitope within the HPV-16 capsid proteins by using a VLP-'infected' HLA-A*0201 transfected human cell line as target cells. These results demonstrated that VLPs can induce a HPV16 capsid protein-specific immune response in humans, allowing the monitoring of immune responses induced by **vaccines** based on chimeric VLPs carrying additional immunogenic peptides or proteins in therapeutical applications in human patients.

L7 ANSWER 103 OF 131 BIOSIS COPYRIGHT 2001 BIOSIS
ACCESSION NUMBER: 1999:290510 BIOSIS
DOCUMENT NUMBER: PREV199900290510
TITLE: Oncogenesis by viruses and epidemiological perspective.
AUTHOR(S): de The, Guy (1)
CORPORATE SOURCE: (1) Institut Pasteur, Paris France
SOURCE: Journal of Acquired Immune Deficiency Syndromes and Human Retrovirology, (April 4, 1999) Vol. 20, No. 4, pp. A10.
Meeting Info.: Ninth International Conference on Human Retrovirology HTLV and Related Viruses Kagoshima, Japan April 5-9, 1999
ISSN: 1077-9450.

DOCUMENT TYPE: Conference
LANGUAGE: English
TI Oncogenesis by viruses and epidemiological perspective.
SO Journal of Acquired Immune Deficiency Syndromes and Human Retrovirology, (April 4, 1999) Vol. 20, No. 4, pp. A10.
Meeting Info.: Ninth International Conference on Human Retrovirology HTLV and Related Viruses Kagoshima, Japan April 5-9, 1999
ISSN: 1077-9450.
AU de The, Guy (1)

7 ANSWER 106 OF 131 BIOSIS COPYRIGHT 2001 BIOSIS
ACCESSION NUMBER: 1999:93357 BIOSIS
DOCUMENT NUMBER: PREV199900093357
TITLE: Specific therapies for **human papilloma virus** infections.
AUTHOR(S): Snoeck, R.; Andrei, G.; De Clercq, E.
CORPORATE SOURCE: Rega Inst. Med. Res., K. U. Leuven, B-3000 Leuven Belgium
SOURCE: Current Opinion in Infectious Diseases, (Dec., 1998) Vol. 11, No. 6, pp. 733-737.
ISSN: 0951-7375.
DOCUMENT TYPE: General Review
LANGUAGE: English
TI Specific therapies for **human papilloma virus** infections.
SO Current Opinion in Infectious Diseases, (Dec., 1998) Vol. 11, No. 6, pp. 733-737.
ISSN: 0951-7375.
AU Snoeck, R.; Andrei, G.; De Clercq, E.

L7 ANSWER 109 OF 131 BIOSIS COPYRIGHT 2001 BIOSIS
ACCESSION NUMBER: 1998:144184 BIOSIS
DOCUMENT NUMBER: PREV199800144184
TITLE: Prospects for human papillomavirus **vaccine** development: Emerging HPV **vaccines**.
AUTHOR(S): Hines, Jeffrey F. (1); Ghim, Shin-Je; Jenson, A. Bennett
CORPORATE SOURCE: (1) Div. Gynecol. Oncol., Dep. Obstet. Gynecol., Build. 3600, 3851 Roger Brooke Drive, Fort Sam Houston, TX 78234-6200 USA
SOURCE: Current Opinion in Infectious Diseases, (Feb., 1998) Vol. 11, No. 1, pp. 57-61.
ISSN: 0951-7375.
DOCUMENT TYPE: Article
LANGUAGE: English
TI Prospects for human papillomavirus **vaccine** development: Emerging HPV **vaccines**.
SO Current Opinion in Infectious Diseases, (Feb., 1998) Vol. 11, No. 1, pp. 57-61.
ISSN: 0951-7375.
AU Hines, Jeffrey F. (1); Ghim, Shin-Je; Jenson, A. Bennett

```
L3       43484 FUSION (W) PROTEIN

=> L2 and L3

L4         275 L2 AND L3

=> "T helper epitopes

MISMATCHED QUOTE '"T'
Quotation marks (or apostrophes) must be used in pairs,
one before and one after the expression you are setting
off or masking.

=> "T helper epitopes"

L5         138 "T HELPER EPITOPES"

=> L5 and L4

L6           0 L5 AND L4

=> influenza and L4

L7           2 INFLUENZA AND L4

=> lipoprotein and L4

L8           2 LIPOPROTEIN AND L4

=> D L8 IBIB TI SO AU ABS 1-2


L8   ANSWER 1 OF 2  CAPLUS  COPYRIGHT 2001 ACS
ACCESSION NUMBER:        1999:468468  CAPLUS
DOCUMENT NUMBER:         131:86861
TITLE:                   E6 and E7 fusion proteins for
                         vaccination against human papilloma virus
INVENTOR(S):             Dalemans, Wilfried L. J.; Gerard, Catherine Marie
                         Ghislaine
PATENT ASSIGNEE(S):      Smithkline Beecham Biologicals S. A., Belg.
SOURCE:                  PCT Int. Appl., 62 pp.
                         CODEN: PIXXD2
DOCUMENT TYPE:           Patent
LANGUAGE:                English
FAMILY ACC. NUM. COUNT:  2
PATENT INFORMATION:

     PATENT NO.        KIND  DATE           APPLICATION NO.   DATE
     ---------------   ----  --------       ---------------   --------
     WO 9933868         A2   19990708       WO 1998-EP8563    19981218
     WO 9933868         A3   19990916
         W:  AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE,
             DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,
             KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN,
             MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM,
             TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU,
             TJ, TM
         RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES,
             FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI,
             CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
     AU 9924191         A1   19990719       AU 1999-24191     19981218
     AU 729336          B2   20010201
     EP 1040123         A2   20001004       EP 1998-966706    19981218
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, FI
     BR 9814487         A    20001010       BR 1998-14487     19981218
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 NEWS  3  Feb 06  Engineering Information Encompass files have new names
 NEWS  4  Feb 16  TOXLINE no longer being updated
 NEWS  5  Apr 23  Search Derwent WPINDEX by chemical structure
 NEWS  6  Apr 23  PRE-1967 REFERENCES NOW SEARCHABLE IN CAPLUS AND CA
 NEWS  7  May 07  DGENE Reload
 NEWS  8  Jun 20  Published patent applications (A1) are now in USPATFULL
 NEWS  9  JUL 13  New SDI alert frequency now available in Derwent's
                  DWPI and DPCI

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               CURRENT MACINTOSH VERSION IS V6.0 (ENG) AND V6.0J (JP),
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=> "HPV fusion protein"

L1            1 "HPV FUSION PROTEIN"

=> HPV

L2        11060 HPV

=> fusion (w) protein
```

L5 ANSWER 80 OF 138 BIOSIS COPYRIGHT 2001 BIOSIS
ACCESSION NUMBER: 2001:210635 BIOSIS
DOCUMENT NUMBER: PREV200100210635
TITLE: Conserved regions of human papillomavirus type 16 (HPV16) E2 protein harbor highly immunogenic **T-helper epitopes**.
AUTHOR(S): de Jong, A. (1); van der Burg, S. H.; Kwappenberg, K. M. C.; Franken, K. L. M. C.; Geluk, A.; Kenter, G.; Vermeij, P. (1); Melief, C. J. M.; Offringa, R.
CORPORATE SOURCE: (1) Department of Clinical Pharmacy and Toxicology, Leiden University Medical Center, Leiden Netherlands
SOURCE: Immunobiology, (November, 2000) Vol. 203, No. 1-2, pp. 401.
print.
Meeting Info.: Joint Annual Meeting of the German and Dutch
Societies of Immunology Duseldorf, Germany November 29-December 02, 2000
ISSN: 0171-2985.
DOCUMENT TYPE: Conference
LANGUAGE: English
SUMMARY LANGUAGE: English
TI Conserved regions of human papillomavirus type 16 (HPV16) E2 protein harbor highly immunogenic **T-helper epitopes**.
SO Immunobiology, (November, 2000) Vol. 203, No. 1-2, pp. 401. print.
Meeting Info.: Joint Annual Meeting of the German and Dutch Societies of Immunology Duseldorf, Germany November 29-December 02, 2000
ISSN: 0171-2985.
AU de Jong, A. (1); van der Burg, S. H.; Kwappenberg, K. M. C.; Franken, K. L. M. C.; Geluk, A.; Kenter, G.; Vermeij, P. (1); Melief, C. J. M.; Offringa, R.

L5 ANSWER 74 OF 138 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1990:96511 CAPLUS
DOCUMENT NUMBER: 112:96511
TITLE: Identification and characterization of **T helper epitopes** in the nucleoprotein of influenza A virus
AUTHOR(S): Gao, Xiao Ming; Liew, Foo Y.; Tite, John P.
CORPORATE SOURCE: Dep. Exp. Immunobiol., Wellcome Res. Lab., Kent, BR3 3BS, UK
SOURCE: J. Immunol. (1989), 143(9), 3007-14
CODEN: JOIMA3; ISSN: 0022-1767
DOCUMENT TYPE: Journal
LANGUAGE: English
TI Identification and characterization of **T helper epitopes** in the nucleoprotein of influenza A virus
SO J. Immunol. (1989), 143(9), 3007-14
CODEN: JOIMA3; ISSN: 0022-1767
AU Gao, Xiao Ming; Liew, Foo Y

L5 ANSWER 68 OF 138 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1991:653381 CAPLUS
DOCUMENT NUMBER: 115:253381
TITLE: Enhancement of immunogenicity using helper T cell epitopes
AUTHOR(S): Cease, Kemp B.
CORPORATE SOURCE: USA
SOURCE: Top. Vaccine Adjuvant Res. (1991), 109-18.
Editor(s): Spriggs, Dale R.; Koff, Wayne C. CRC: Boca Raton, Fla.
CODEN: 57EQAC
DOCUMENT TYPE: Conference; General Review
LANGUAGE: English
TI Enhancement of immunogenicity using helper T cell epitopes
SO Top. Vaccine Adjuvant Res. (1991), 109-18. Editor(s): Spriggs, Dale R.; Koff, Wayne C. Publisher: CRC, Boca Raton, Fla.
CODEN: 57EQAC
AU Cease, Kemp B

L5 ANSWER 62 OF 138 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1992:631746 CAPLUS
DOCUMENT NUMBER: 117:231746
TITLE: Immunogenicity of free synthetic peptides corresponding to **T helper epitopes** of the influenza HA 1 subunit: induction of virus cross reacting CD4+ T lymphocytes in mice
AUTHOR(S): Schneider, C.; Van Regenmortel, M. H. V.
CORPORATE SOURCE: Inst. Biol. Mol. Cell., CNRS, Strasbourg, Fr.
SOURCE: Arch. Virol. (1992), 125(1-4), 103-19
CODEN: ARVIDF; ISSN: 0304-8608
DOCUMENT TYPE: Journal
LANGUAGE: English
TI Immunogenicity of free synthetic peptides corresponding to **T helper epitopes** of the influenza HA 1 subunit: induction of virus cross reacting CD4+ T lymphocytes in mice
SO Arch. Virol. (1992), 125(1-4), 103-19
CODEN: ARVIDF; ISSN: 0304-8608
AU

L5 ANSWER 50 OF 138 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1994:506125 CAPLUS
DOCUMENT NUMBER: 121:106125
TITLE: Scanning for **T helper epitopes** with human PBMC using pools of short synthetic peptides
AUTHOR(S): Reece, Jeanette C.; McGregor, Donna L.; Geysen, H. Mario; Rodda, Stuart J.
CORPORATE SOURCE: Chiron Mimotopes Pty. Ltd., 11 Duerdin St., Clayton, Victoria, 3168, Australia
SOURCE: J. Immunol. Methods (1994), 172(2), 241-54
CODEN: JIMMBG; ISSN: 0022-1759
DOCUMENT TYPE: Journal
LANGUAGE: English
TI Scanning for **T helper epitopes** with human PBMC using pools of short synthetic peptides
SO J. Immunol. Methods (1994), 172(2), 241-54
CODEN: JIMMBG; ISSN: 0022-1759
AU Reece, Jeanette C.; McGregor, Donna L.; Geysen, H. Mario; Rodda, Stuart J.

L5 ANSWER 44 OF 138 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1995:449454 CAPLUS
DOCUMENT NUMBER: 122:236586
TITLE: **T-helper epitopes** of the E7 transforming protein of cervical cancer associated human papillomavirus type 18 (HPV18)
AUTHOR(S): Fernando, Germain J. P.; Tindle, Robert W.; Frazer, Ian H.
CORPORATE SOURCE: Papillomavirus Research Unit, Lions Human Immunology Laboratories, University of Queensland Department of Medicine, Princess Alexandra Hospital, Woolloongabba 4102, Queensland, Australia
SOURCE: Virus Res. (1995), 36(1), 1-13
CODEN: VIREDF; ISSN: 0168-1702
DOCUMENT TYPE: Journal
LANGUAGE: English
TI **T-helper epitopes** of the E7 transforming protein of cervical cancer associated human papillomavirus type 18 (HPV18)
SO Virus Res. (1995), 36(1), 1-13
CODEN: VIREDF; ISSN: 0168-1702
AU Fernando, Germain J. P.; T

5 ANSWER 40 OF 138 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1996:172778 CAPLUS
DOCUMENT NUMBER: 124:257669
TITLE: The structure of T cell epitopes
AUTHOR(S): Stevanovic, Stefan; Rammensee, Hans-Georg
CORPORATE SOURCE: Angewandte Tumorvirus-Immunologie Deutsches Krebsforschungszentrum, Heidelberg, Germany
SOURCE: Struct. Antigens (1996), Volume 3, 61-90. Editor(s): Van Regenmortel, M. H. V. CRC: Boca Raton, Fla. CODEN: 57YWAS
DOCUMENT TYPE: Conference; General Review
LANGUAGE: English
TI The structure of T cell epitopes
SO Struct. Antigens (1996), Volume 3, 61-90. Editor(s): Van Regenmortel, M. H. V. Publisher: CRC, Boca Raton, Fla. CODEN: 57YWAS
AU Stevanovic, Stefan; Rammensee, Hans-Georg

L5 ANSWER 41 OF 138 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1995:999170 CAPLUS
DOCUMENT NUMBER: 124:84199
TITLE: Peptide polymerization facilitates incorporation into ISCOMs and increases antigen-specific IgG2a production
AUTHOR(S): Fernando, Germain J.P.; Stenzel, Deborah J.; Tindle, Robert W.; Merza, Malik S.; Morein, Bror; Frazer, Ian H.
CORPORATE SOURCE: Princess Alexandra Hospital, University of Queensland, Brisbane, 4102, Australia
SOURCE: Vaccine (1995), Volume Date 1995, 13(15), 1460-7 CODEN: VACCDE; ISSN: 0264-410X
DOCUMENT TYPE: Journal
LANGUAGE: English
TI Peptide polymerization facilitates incorporation into ISCOMs and increases antigen-specific IgG2a production
SO Vaccine (1995), Volume Date 1995, 13(15), 1460-7 CODEN: VACCDE; ISSN: 0264-410X
AU Fernando, Germain J.P.; Stenzel, Deborah J.; Tindle, Robert W.; Merza, Malik S.; Morein, Bror; Frazer, Ian H.

L5 ANSWER 42 OF 138 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1995:888040 CAPLUS
DOCUMENT NUMBER: 123:283629
TITLE: Compositions and methods for eliciting cytotoxic T lymphocyte immunity
INVENTOR(S): Vitiello, Maria A.; Chesnut, Robert W.; Sette, Alessandro D.; Celis, Esteban; Grey, Howard
PATENT ASSIGNEE(S): Cytel Corp., USA
SOURCE: PCT Int. Appl., 108 pp. CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9522317	A1	19950824	WO 1995-US2121	19950216

W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TJ, TT, UA, UG
RW: KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

CA 2183416	AA	19950824	CA 1995-2183416	19950216
AU 9518473	A1	19950904	AU 1995-18473	19950216
EP 804158	A1	19971105	EP 1995-910309	19950216

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE

AU 9925004	A1	19990624	AU 1999-25004	19990429
AU 727738	B2	20001221		

PRIORITY APPLN. INFO.:	US 1994-197484	A 19940216
	AU 1995-18473	A3 19950216
	WO 1995-US2121	W 19950216

TI Compositions and methods for eliciting cytotoxic T lymphocyte immunity
SO PCT Int. Appl., 108 pp.
CODEN: PIXXD2
IN Vitiello, Maria A.; Chesnut, Robert W.; Sette, Alessandro D.; Celis, Esteban; Grey, Howard

L5 ANSWER 43 OF 138 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER:	1995:616414 CAPLUS
DOCUMENT NUMBER:	123:81393
TITLE:	DR4Dw4/DR53 molecules contain a peptide from the autoantigen calreticulin
AUTHOR(S):	Verreck, F. A. W.; Elferink, D.; Vermeulen, C. J.; Amons, R.; Breedveld, F.; de Vries, R. R. P.; Koning, F.
CORPORATE SOURCE:	Department of Immunohaematology and Bloodbank, University Hospital Leiden, Neth.
SOURCE:	Tissue Antigens (1995), 45(4), 270-5 CODEN: TSANA2; ISSN: 0001-2815
DOCUMENT TYPE:	Journal
LANGUAGE:	English

TI DR4Dw4/DR53 molecules contain a peptide from the autoantigen calreticulin
SO Tissue Antigens (1995), 45(4), 270-5
CODEN: TSANA2; ISSN: 0001-2815
AU Verreck, F. A. W.; Elferink, D.; Vermeulen, C. J.; Amons, R.; Breedveld, F.; de Vries, R. R. P.; Koning, F.

L5 ANSWER 31 OF 138 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1997:750613 CAPLUS
DOCUMENT NUMBER: 128:60449
TITLE: Tandem repeats of **T helper epitopes** enhance immunogenicity of fusion proteins by promoting processing and presentation
AUTHOR(S): Kjerrulf, Martin; Lowenadler, Bjorn; Svanholm, Cecilia; Lycke, Nils
CORPORATE SOURCE: Dep. Med. Microbiol. Immunol., Univ. Goteborg, Goteborg, S-413 46, Swed.
SOURCE: Mol. Immunol. (1997), 34(8/9), 599-608
CODEN: MOIMD5; ISSN: 0161-5890
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
TI Tandem repeats of **T helper epitopes** enhance immunogenicity of fusion proteins by promoting processing and presentation
SO Mol. Immunol. (1997), 34(8/9), 599-608
CODEN: MOIMD5; ISSN: 0161-5890
AU Kjerrulf, Martin; Lowenadler, Bjorn; Svanholm, Cecilia; Lycke, Nils

5 ANSWER 29 OF 138 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1998:220204 CAPLUS
DOCUMENT NUMBER: 129:3838
TITLE: Specificity of the T-cell responses in covalently linked peptides each comprising of a T helper epitope
AUTHOR(S): Partidos, C. D.; Kanse, C.
CORPORATE SOURCE: Dep. Pathol. Infectious Diseases, Royal Veterinary Coll., London, NW1 OTU, UK
SOURCE: Mol. Immunol. (1997), 34(16/17), 1105-1111
CODEN: MOIMD5; ISSN: 0161-5890
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
TI Specificity of the T-cell responses in covalently linked peptides each comprising of a T helper epitope
SO Mol. Immunol. (1997), 34(16/17), 1105-1111
CODEN: MOIMD5; ISSN: 0161-5890
AU Partidos, C. D.; Kanse, C.

DOCUMENT NUMBER: 132:164904
TITLE: **T-helper epitopes** identified within the E6 transforming protein of cervical cancer-associated human papillomavirus type 16
AUTHOR(S): Azoury-Ziadeh, Rania; Herd, Karen; Fernando, Germain J. P.; Frazer, Ian H.; Tindle, Robert W.
CORPORATE SOURCE: Centre for Immunology and Cancer Research, University of Queensland Department of Medicine, Princess Alexandra Hospital, Brisbane, Australia
SOURCE: Viral Immunol. (1999), 12(4), 297-312
CODEN: VIIMET; ISSN: 0882-8245
PUBLISHER: Mary Ann Liebert, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
TI **T-helper epitopes** identified within the E6 transforming protein of cervical cancer-associated human papillomavirus type 16
SO Viral Immunol. (1999), 12(4), 297-312
CODEN: VIIMET; ISSN: 0882-8245
AU Azoury-Ziadeh, Rania; Herd, Karen; Fernando, Germain J. P.; Frazer, Ian H.; Tindle, Robert W.
REFERENCE COUNT: 52
REFERENCE(S):
(1) Altuvia, Y; Mol Immunol 1994, V31, P1 CAPLUS
(2) Bauer, S; Scand J Immunol 1995, V42, P317 CAPLUS
(3) Berzofsky, J; Immunol Rev 1987, V98, P9 CAPLUS
(4) Bjorkman, P; Nature 1987, V329, P512 CAPLUS
(6) Brett, S; J Exp Med 1988, V168, P357 CAPLUS

5 ANSWER 14 OF 138 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2000:102328 CAPLUS
DOCUMENT NUMBER: 132:277887
TITLE: Identification of an epitope on the dengue virus membrane (M) protein defined by cross-protective monoclonal antibodies: design of an improved epitope sequence based on common determinants present in both envelope (E and M) proteins
AUTHOR(S): Falconar, A. K. I.
CORPORATE SOURCE: Department of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine, London, UK
SOURCE: Arch. Virol. (1999), 144(12), 2313-2330
CODEN: ARVIDF; ISSN: 0304-8608
PUBLISHER: Springer-Verlag Wien
DOCUMENT TYPE: Journal
LANGUAGE: English
TI Identification of an epitope on the dengue virus membrane (M) protein defined by cross-protective monoclonal antibodies: design of an improved epitope sequence based on common determinants present in both envelope (E and M) proteins
SO Arch. Virol. (1999), 144(12), 2313-2330
CODEN: ARVIDF; ISSN: 0304-8608
AU Falconar, A. K. I.
REFERENCE COUNT: 37
REFERENCE(S): (2) Allison, A; Dev Biol Standards 1998, V92, P3 CAPLUS
(3) Bray, M; Virology 1991, V185, P505 CAPLUS
(5) Falconar, A; Arch Virol 1994, V137, P315 CAPLUS
(6) Falconar, A; Arch Virol 1997, V142, P897 CAPLUS
(7) Falconar, A; J Gen Virol 1991, V72, P961 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 15 OF 138 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2000:30683 CAPLUS
DOCUMENT NUMBER: 132:164904
TITLE: **T-helper epitopes** identified within the E6 transforming protein of cervical cancer-associated human papillomavirus type 16
AUTHOR(S): Azoury-Ziadeh, Rania; Herd, Karen; Fernando, Germain J. P.; Frazer, Ian H.; Tindle, Robert W.
CORPORATE SOURCE: Centre for Immunology and Cancer Research, University of Queensland Department of Medicine, Princess Alexandra Hospital, Brisbane, Australia
SOURCE: Viral Immunol. (1999), 12(4), 297-312
CODEN: VIIMET; ISSN: 0882-8245
PUBLISHER: Mary Ann Liebert, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
TI **T-helper epitopes** identified within the E6 transforming protein of cervical cancer-associated human papillomavirus type 16
SO Viral Immunol. (1999), 12(4), 297-312
CODEN: VIIMET; ISSN: 0882-8245
AU Azoury-Ziadeh, Rania; Herd, Karen; Fernando, Germain J. P.; Frazer, Ian H.; Tindle, Robert W.
REFERENCE COUNT: 52
REFERENCE(S): (1) Altuvia, Y; Mol Immunol 1994, V31, P1 CAPLUS
(2) Bauer, S; Scand J Immunol 1995, V42, P317 CAPLUS

(3) Berzofsky, J; Immunol Rev 1987, V98, P9 CAPLUS
(4) Bjorkman, P; Nature 1987, V329, P512 CAPLUS
(6) Brett, S; J Exp Med 1988, V168, P357 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

5 ANSWER 87 OF 138 BIOSIS COPYRIGHT 2001 BIOSIS
ACCESSION NUMBER: 2000:89915 BIOSIS
DOCUMENT NUMBER: PREV200000089915
TITLE: **T-helper epitopes** identified within the E6 transforming protein of cervical cancer-associated human papillomavirus type 16.
AUTHOR(S): Azoury-Ziadeh, Rania; Herd, Karen; Fernando, Germain J.P.; Frazer, Ian H.; Tindle, Robert W. (1)
CORPORATE SOURCE: (1) Sir Albert Sakzewski Virus Research Centre, Royal Children's Hospital, Herston Road, Herston, Queensland, 4029 Australia
SOURCE: Viral Immunology, (1999) Vol. 12, No. 4, pp. 297-312. ISSN: 0882-8245.
DOCUMENT TYPE: Article
LANGUAGE: English
SUMMARY LANGUAGE: English
TI **T-helper epitopes** identified within the E6 transforming protein of cervical cancer-associated human papillomavirus type 16.
SO Viral Immunology, (1999) Vol. 12, No. 4, pp. 297-312. ISSN: 0882-8245.
AU Azoury-Ziadeh, Rania; Herd, Karen; Fernando, Germain J.P.; Frazer, Ian H.;
Tindle, R

L5 ANSWER 136 OF 138 BIOSIS COPYRIGHT 2001 BIOSIS
ACCESSION NUMBER: 1990:365364 BIOSIS
DOCUMENT NUMBER: BR39:49840
TITLE: IDENTIFICATION AND CHARACTERIZATION OF **T-HELPER EPITOPES** IN THE MAJOR OUTER MEMBRANE PROTEIN OF CHLAMYDIA-TRACHOMATIS.
AUTHOR(S): SU H; MORRISON R P; CALDWELL H D
CORPORATE SOURCE: LMSF, ROCKY MOUNTAIN LAB., NIAID, NIH, HAMILTON, MONT. 59840, USA.
SOURCE: 90TH ANNUAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY 1990, ANAHEIM, CALIFORNIA, USA, MAY 13-17, 1990. ABSTR ANNU MEET AM SOC MICROBIOL, (1990) 90 (0), 80.
CODEN: ASMACK. ISSN: 0094-8519.
DOCUMENT TYPE: Conference
FILE SEGMENT: BR; OLD
LANGUAGE: English
TI IDENTIFICATION AND CHARACTERIZATION OF **T-HELPER EPITOPES** IN THE MAJOR OUTER MEMBRANE PROTEIN OF CHLAMYDIA-TRACHOMATIS.
SO 90TH ANNUAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY 1990, ANAHEIM, CALIFORNIA, USA, MAY 13-17, 1990. ABSTR ANNU MEET AM SOC MICROBIOL. (1990) 90 (0), 80.
CODEN: ASMACK. ISSN: 0094-8519.
AU SU H; MORRISON R P; CALDWELL H D

L5 ANSWER 137 OF 138 BIOSIS COPYRIGHT 2001 BIOSIS
ACCESSION NUMBER: 1990:27878 BIOSIS
DOCUMENT NUMBER: BA89:14844
TITLE: IDENTIFICATION AND CHARACTERIZATION OF **T HELPER EPITOPES** IN THE NUCLEOPROTEIN OF INFLUENZA A VIRUS.
AUTHOR(S): GAO X-M; LIEW F Y; TITE J P
CORPORATE SOURCE: DEP. EXP. IMMUNOBIOL., WELLCOME RES. LAB., LANGLEY COURT, KENT BR3 3BS, UK.
SOURCE: J IMMUNOL, (1989) 143 (9), 3007-3014.
CODEN: JOIMA3. ISSN: 0022-1767.
FILE SEGMENT: BA; OLD
LANGUAGE: English
TI IDENTIFICATION AND CHARACTERIZATION OF **T HELPER EPITOPES** IN THE NUCLEOPROTEIN OF INFLUENZA A VIRUS.
SO J IMMUNOL, (1989) 143 (9), 3007-3014.
CODEN: JOIMA3. ISSN: 0022-1767.
AU GAO X-M; LIEW F Y; TITE J P

NO 2000003303 A 20000804 NO 2000-3303 20000623
PRIORITY APPLN. INFO.: GB 1997-27262 A 19971224
WO 1998-EP8563 W 19981218

TI E6 and E7 **fusion proteins** for vaccination against human papilloma virus

SO PCT Int. Appl., 62 pp.
CODEN: PIXXD2

IN Dalemans, Wilfried L. J.; Gerard, Catherine Marie Ghislaine

AB The authors disclose the prepn. and characterization of **fusion proteins** of E6 and/or E7 of human papilloma virus (type 16 or 18) linked to an immunol. fusion partner that provides Th1 cell-type help. In one example, using recombinant DNA technol., a fragment of protein D of Haemophilus influenzae B was fused to the N-terminal fragment of E6 and expressed in E. coli. In a second example, the immunol. fusion partner providing T-cell help is the LytA amidase of Streptococcus pneumoniae. Vaccination with a **fusion protein**, in combination with CpG oligonucleotide, induced the regression of **HPV** E6-mediated tumors.

L8 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1999:166640 CAPLUS
DOCUMENT NUMBER: 130:222110
TITLE: **Fusion proteins** of human papillomavirus E6 and E7 stimulate a type 1 T-cell response
INVENTOR(S): Bruck, Claudine; Cabezon Silva, Teres; Delisse, Anne-Marie Eva Fernande; Gerard, Catherine Marie Ghislaine; Lombardo-Bencheikh, Angela
PATENT ASSIGNEE(S): Smithkline Beecham Biologicals S.A., Belg.
SOURCE: PCT Int. Appl., 95 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9910375	A2	19990304	WO 1998-EP5285	19980817
WO 9910375	A3	19990610		
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9892639	A1	19990316	AU 1998-92639	19980817
AU 732946	B2	20010503		
EP 1007551	A2	20000614	EP 1998-945269	19980817
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI				
BR 9812139	A	20000718	BR 1998-12139	19980817
NO 2000000850	A	20000414	NO 2000-850	20000221

PRIORITY APPLN. INFO.: GB 1997-17953 A 19970822
WO 1998-EP5285 W 19980817

TI **Fusion proteins** of human papillomavirus E6 and E7 stimulate a type 1 T-cell response

SO PCT Int. Appl., 95 pp.
CODEN: PIXXD2

IN Bruck, Claudine; Cabezon Silva, Teres; Delisse, Anne-Marie Eva Fernande; Gerard, Catherine Marie Ghislaine; Lombardo-Bencheikh, Angela

AB The authors disclose the plasmid construction, expression, and purifn. from E. coli of human papillomavirus early proteins E6 and E7 linked to

immunol. active fusion partners. These **fusion proteins** elicit a Th1 helper cell response in immunized mice. Using an E6/E7 **HPV**-transformed epithelial cell line, a vaccine formulation protected against **HPV**-induced lesions and tumor development.

=> D L7 IBIB TI SO AU ABS 1-2

L7 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1999:468468 CAPLUS
DOCUMENT NUMBER: 131:86861
TITLE: E6 and E7 **fusion proteins** for vaccination against human papilloma virus
INVENTOR(S): Dalemans, Wilfried L. J.; Gerard, Catherine Marie Ghislaine
PATENT ASSIGNEE(S): Smithkline Beecham Biologicals S. A., Belg.
SOURCE: PCT Int. Appl., 62 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9933868	A2	19990708	WO 1998-EP8563	19981218
WO 9933868	A3	19990916		
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9924191	A1	19990719	AU 1999-24191	19981218
AU 729336	B2	20010201		
EP 1040123	A2	20001004	EP 1998-966706	19981218
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI				
BR 9814487	A	20001010	BR 1998-14487	19981218
NO 2000003303	A	20000804	NO 2000-3303	20000623

PRIORITY APPLN. INFO.: GB 1997-27262 A 19971224
WO 1998-EP8563 W 19981218

TI E6 and E7 **fusion proteins** for vaccination against human papilloma virus
SO PCT Int. Appl., 62 pp.
CODEN: PIXXD2
IN Dalemans, Wilfried L. J.; Gerard, Catherine Marie Ghislaine
AB The authors disclose the prepn. and characterization of **fusion proteins** of E6 and/or E7 of human papilloma virus (type 16 or 18) linked to an immunol. fusion partner that provides Th1 cell-type help. In one example, using recombinant DNA technol., a fragment of protein D of Haemophilus influenzae B was fused to the N-terminal fragment of E6 and expressed in E. coli. In a second example, the immunol. fusion partner providing T-cell help is the LytA amidase of Streptococcus pneumoniae. Vaccination with a **fusion protein**, in combination with CpG oligonucleotide, induced the regression of **HPV** E6-mediated tumors.

L7 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1995:319826 CAPLUS
DOCUMENT NUMBER: 122:98808

TITLE: Cloning and expression of human .beta.2-microglobulin cDNA and the construction of **fusion proteins** between antigenic epitopes and .beta.2-microglobulin

INVENTOR(S): Edwards, Richard Mark; Hunter, Michael George

PATENT ASSIGNEE(S): British Bio-Technology Ltd., UK

SOURCE: PCT Int. Appl., 30 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9424290	A1	19941027	WO 1994-GB755	19940408
W: AU, BR, CA, CN, CZ, DE, FI, GB, HU, JP, KR, NO, NZ, PL, RU, UA, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9464353	A1	19941108	AU 1994-64353	19940408
EP 693125	A1	19960124	EP 1994-912040	19940408
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				

PRIORITY APPLN. INFO.: GB 1993-7371 19930408
WO 1994-GB755 19940408

TI Cloning and expression of human .beta.2-microglobulin cDNA and the construction of **fusion proteins** between antigenic epitopes and .beta.2-microglobulin

SO PCT Int. Appl., 30 pp.
CODEN: PIXXD2

IN Edwards, Richard Mark; Hunter, Michael George

AB A method is described for the cloning and expression of human .beta.2-microglobulin (B2M) cDNA in vector host cells which allows the construction of B2M **fusion proteins** with antigenic sequences from various etiol. agents or tumors. Preferred antigenic sequences are derived from the third variable domain (V3 loop) of an envelope protein of a lentivirus. These **fusion proteins** can be used as prophylactic or immunotherapeutic vaccines to induce neutralizing antibody responses. Thus, B2M cDNA was inserted into the pHILD1 expression vector for expression in the Pichia pastoris system. The expression vector includes an AOX promoter sequence and an .alpha.-factor or Pho1 leader sequence to obtain secretion of the **fusion protein** from the yeast cells. Within the Pichia pastoris expression system, the B2M gene was fused at its 5' end to the Sendai virus epitope (FAPGNYPAL-GGGGG, where the pentaglycine is a short linker) or to the **influenza** A virus nucleoprotein epitope (GILGFVFTL-GGGGGGSSS). Prodn. levels from strains with the .alpha.-factor leader sequence were .apprx.150 mg/L. The hybrid Sendai-B2M product was

L5 ANSWER 129 OF 138 BIOSIS COPYRIGHT 2001 BIOSIS
ACCESSION NUMBER: 1992:476967 BIOSIS
DOCUMENT NUMBER: BA94:108342
TITLE: IMMUNOGENICITY OF FREE SYNTHETIC PEPTIDES CORRESPONDING TO **T HELPER EPITOPES** OF THE INFLUENZA HA 1 SUBUNIT INDUCTION OF VIRUS CROSS REACTING CD4-POSITIVE T LYMPHOCYTE IN MICE.
AUTHOR(S): SCHNEIDER C; VAN REGENMORTEL M H V
CORPORATE SOURCE: INST. BIOL. MOL. CELL DU CNRS, 15 RUE DESCARTES, F-67084 STRASBOURG CEDEX, FR.
SOURCE: ARCH VIROL, (1992) 125 (1-4), 103-119.
CODEN: ARVIDF. ISSN: 0304-8608.
FILE SEGMENT: BA; OLD
LANGUAGE: English
TI IMMUNOGENICITY OF FREE SYNTHETIC PEPTIDES CORRESPONDING TO **T HELPER EPITOPES** OF THE INFLUENZA HA 1 SUBUNIT INDUCTION OF VIRUS CROSS REACTING CD4-POSITIVE T LYMPHOCYTE IN MICE.
SO ARCH VIROL, (1992) 125 (1-4), 103-119.
CODEN: ARVIDF. ISSN: 0304-8608.
AU SCHNEIDER C; VAN REGENMORTEL M H V

L5 ANSWER 117 OF 138 BIOSIS COPYRIGHT 2001 BIOSIS
ACCESSION NUMBER: 1994:391526 BIOSIS
DOCUMENT NUMBER: PREV199497404526
TITLE: Scanning for **T helper epitopes** with human PBMC using pools of short synthetic peptides.
AUTHOR(S): Reece, Jeanette C.; McGregor, Donna L.; Geysen, H. Mario; Rodda, Stuart J. (1)
CORPORATE SOURCE: (1) Chiron Mimotopes Pty. Ltd., P.O. Box 1415, Rosebank MDC, Clayton, VIC 3169 Australia
SOURCE: Journal of Immunological Methods, (1994) Vol. 172, No. 2, pp. 241-254.
ISSN: 0022-1759.
DOCUMENT TYPE: Article
LANGUAGE: English
TI Scanning for **T helper epitopes** with human PBMC using pools of short synthetic peptides.
SO Journal of Immunological Methods, (1994) Vol. 172, No. 2, pp. 241-254.
ISSN: 0022-1759.
AU Reece, Jeanette C.; McGregor, Donna L.; Geysen, H. Mario; Rodda, Stuart J.
(1)

L5 ANSWER 118 OF 138 BIOSIS COPYRIGHT 2001 BIOSIS
ACCESSION NUMBER: 1994:187642 BIOSIS
DOCUMENT NUMBER: PREV199497200642
TITLE: NMR-derived solution conformations of a hybrid synthetic peptide containing multiple epitopes of envelope protein gp120 from the RF strain of human immunodeficiency virus.
AUTHOR(S): De Lorimier, Robert; Moody, M. Anthony; Haynes, Barton F.; Spicer, Leonard D.
CORPORATE SOURCE: Dep. Biochem. Radiol., Duke Univ. Med. Cent., Durham, NC 27710 USA
SOURCE: Biochemistry, (1994) Vol. 33, No. 8, pp. 2055-2062.
ISSN: 0006-2960.
DOCUMENT TYPE: Article
LANGUAGE: English
TI NMR-derived solution conformations of a hybrid synthetic peptide containing multiple epitopes of envelope protein gp120 from the RF strain of human immunodeficiency virus.
SO Biochemistry, (1994) Vol. 33, No. 8, pp. 2055-2062.
ISSN: 0006-2960.
AU De Lorimier, Robert; Moody, M. Anthony; Haynes, Barton F.; Spicer, Leonard
D.

L5 ANSWER 119 OF 138 BIOSIS COPYRIGHT 2001 BIOSIS
ACCESSION NUMBER: 1994:179330 BIOSIS
DOCUMENT NUMBER: PREV199497192330
TITLE: Virus or a hapten-carrier complex can activate autoreactive
B cells by providing linked T help.
AUTHOR(S): Steinhoff, Ulrich (1); Burkhart, Christoph; Arnheiter, Heinz; Hengartner, Hans; Zinkernagel, Rolf
CORPORATE SOURCE: (1) Inst. Experimental Immunol., Dep. Pathol., Schmelzbergstr. 12, CH-8091 Zurich Switzerland
SOURCE: European Journal of Immunology, (1994) Vol. 24, No. 3, pp. 773-776.
ISSN: 0014-2980.
DOCUMENT TYPE: Article
LANGUAGE: English

TI Virus or a hapten-carrier complex can activate autoreactive B cells by providing linked T help.

SO European Journal of Immunology, (1994) Vol. 24, No. 3, pp. 773-776. ISSN: 0014-2980.

AU Steinhoff, Ulrich (1); Burkhart, Christoph; Arnheiter, Heinz; Hengartner, Hans; Zinkernagel, Rolf

L5 ANSWER 111 OF 138 BIOSIS COPYRIGHT 2001 BIOSIS
ACCESSION NUMBER: 1995:221173 BIOSIS
DOCUMENT NUMBER: PREV199598235473
TITLE: **T-helper epitopes** of the E7 transforming protein of cervical cancer associated human papillomavirus type 18 (HPV18.
AUTHOR(S): Fernando, Germain J. P. (1); Tindle, Robert W.; Frazer, Ian H.
CORPORATE SOURCE: (1) Papillomavirus Res. Unit, Lions Human Immunol. Lab., Univ. Queensland, Dep. Med., Princess Alexandra Hosp., Woolloongabba, QLD 4102 Australia
SOURCE: Virus Research, (1995) Vol. 36, No. 1, pp. 1-13. ISSN: 0168-1702.
DOCUMENT TYPE: Article
LANGUAGE: English
TI **T-helper epitopes** of the E7 transforming protein of cervical cancer associated human papillomavirus type 18 (HPV18.
SO Virus Research, (1995) Vol. 36, No. 1, pp. 1-13. ISSN: 0168-1702.

L10 ANSWER 22 OF 22 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1998:392501 BIOSIS
DN PREV199800392501
TI Immuno-stimulatory effects of bacterial-derived plasmids depend on the nature of the antigen in intramuscular DNA inoculations.
AU Lee, S. W.; Sung, Y. C. (1)
CS (1) Dep. Life Sci., Pohang Univ. Sci. Technol., San 31, Hyoja Dong, Pohang
790-784 South Korea
SO Immunology, (July, 1998) Vol. 94, No. 3, pp. 285-289.
ISSN: 0019-2805.
DT Article
LA English
TI Immuno-stimulatory effects of bacterial-derived plasmids depend on the nature of the antigen in intramuscular DNA inoculations.
SO Immunology, (July, 1998) Vol. 94, No. 3, pp. 285-289.
ISSN: 0019-2805.
AU Lee, S. W.; Sung, Y. C. (1)
AB The **CpG motifs** of bacterial-derived plasmids augment antigen-specific immune responses and steer those responses towards the T helper 1 (Th1) type. In this study, we have addressed the immunostimulatory effect of intramuscular co-administration of **CpG motifs** containing vector DNA on the modulation of immune responses to the haemagglutinin (HA) and the nucleoprotein (NP) proteins of influenza virus. The co-administration of vector DNA with a HA-encoding plasmid DNA showed a significant enhancement in the total IgG response, the generation of cytotoxic T lymphocyte (**CTL**), and the T-cell proliferative response. In the case of NP-encoding plasmid DNA inoculations, the co-administration of vector DNA slightly decreased the total IgG response, although the IgG2a/IgG1 ratio and the **CTL** responses to NP were significantly increased. These observations suggest that the immuno-stimulatory effects of bacterial-derived plasmids depend upon the nature of the co-administered antigen.

L10 ANSWER 21 OF 22 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1999:259401 BIOSIS
DN PREV199900259401
TI Gene gun DNA vaccination with Rev-independent synthetic HIV-1 gp160 envelope gene using mammalian codons.
AU Vinner, Lasse; Nielsen, Henrik V.; Bryder, Karin; Corbet, Sylvie; Nielsen, Claus; Fomsgaard, Anders (1)
CS (1) Department of Virology, Statens Serum Institut, 5 Artillerivej, DK-2300, Copenhagen S Denmark
SO Vaccine, (April 23, 1999) Vol. 17, No. 17, pp. 2166-2175. ISSN: 0264-410X.
DT Article
LA English
SL English
TI Gene gun DNA vaccination with Rev-independent synthetic HIV-1 gp160 envelope gene using mammalian codons.
SO Vaccine, (April 23, 1999) Vol. 17, No. 17, pp. 2166-2175. ISSN: 0264-410X.
AU Vinner, Lasse; Nielsen, Henrik V.; Bryder, Karin; Corbet, Sylvie; Nielsen, Claus; Fomsgaard, Anders (1)
AB DNA immunization with HIV envelope plasmids induce only moderate levels of specific antibodies which may in part be due to limitations in expression influenced by a species-specific and biased HIV codon usage. We compared antibody levels, Th1/Th2 type and **CTL** responses induced by synthetic genes encoding membrane bound gp160 versus secreted gp120 using optimized codons and the efficient gene gun immunization method. The in vitro expression of syn.gp160 as gp120 + gp41 was Rev independent and much higher than a classical wt.gp160 plasmid. Mice immunized with syn.gp160 and wt.gp160 generated low and inconsistent ELISA antibody titres whereas the secreted gp120 consistently induced faster seroconversion and higher antibody titres. Due to a higher C + G content the numbers of putative CpG immune (Th1) stimulatory motifs were highest in the synthetic gp160 gene. However, both synthetic genes induced an equally strong and more pronounced Th2 response with higher IgG1/IgG2a and IFNgamma/IL-4 ratios than the wt.gp160 gene. As for induction of **CTL**, synthetic genes induced a somewhat earlier response but did not offer any advantage over wild type genes at a later time point. Thus, optimizing codon usage has the advantage of rendering the structural HIV genes Rev independent. For induction of antibodies the level of expression, while important, seems less critical than optimal contact with antigen presenting cells at locations reached by the secreted gp120 protein. A proposed Th1 adjuvant effect of the higher numbers of **CpG motifs** in the synthetic genes was not seen using gene gun immunization which may be due

L10 ANSWER 16 OF 22 MEDLINE
AN 1999279901 MEDLINE
DN 99279901
TI Immunostimulatory **CpG motifs** trigger a T helper-1 immune response to human immunodeficiency virus type-1 (HIV-1) gp 160 envelope proteins.
AU Deml L; Schirmbeck R; Reimann J; Wolf H; Wagner R
CS Institute of Medical Microbiology, University of Regensburg, Germany.
SO CLINICAL CHEMISTRY AND LABORATORY MEDICINE, (1999 Mar) 37 (3) 199-204. Journal code: CZ8. ISSN: 1434-6621.
CY GERMANY: Germany, Federal Republic of
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199909
EW 19990903
TI Immunostimulatory **CpG motifs** trigger a T helper-1 immune response to human immunodeficiency virus type-1 (HIV-1) gp 160 envelope proteins.
SO CLINICAL CHEMISTRY AND LABORATORY MEDICINE, (1999 Mar) 37 (3) 199-204. Journal code: CZ8. ISSN: 1434-6621.
AU Deml L; Schirmbeck R; Reimann J; Wolf H; Wagner R
AB Bacterial DNA sequences containing unmethylated **CpG motifs** have recently been proposed to exhibit immunostimulatory effects on B-, T- and NK cells, leading to the induction of humoral and cell-mediated immune responses. In the present study we investigated the immunomodulatory effects of a CpG-containing oligodeoxynucleotide (CpG ODN) to the HIV-1 gp 160 envelope (Env) protein in the BALB/c mouse model.

Priming and boosting of mice with gp 160 adsorbed to aluminium hydroxide (Alum) induced a typical T helper-2 (Th2)-dominated immune response with high titers of gp 160-specific immunoglobulin (Ig)G1 isotypes but a weak IgG2a response. Specifically re-stimulated splenocytes from these mice predominantly secreted interleukin (IL)-5 but only minute amounts of interferon-gamma (IFN-gamma) upon specific re-stimulation. In contrast, a boost immunisation of gp 160/Alum primed mice with a gp 160/Alum/CpG combination resulted in a seven times higher production of IgG2a antibodies, without affecting the titers of IgG1 isotypes. Furthermore, approximately 10-fold increased levels of IFN-gamma, but significantly reduced amounts of IL-5, were secreted from gp 160-restimulated splenic cells. A further greater than 30-fold increase in the levels of specific IgG2a responses and a substantially elevated secretion of IFN-gamma were observed when the mice received gp160/Alum/CpG combinations for priming and boost injections. Thus, CpG ODNs are useful as an adjuvant to induce a

typical Th0/Th1 response to HIV gp 160 proteins. However, despite the induction of a more Th1-like immune response, gp 160/Alum/CpG combinations

were not sufficient to prime an Env-specific cytotoxic T-cell (**CTL**) resp

AN 2000318758 MEDLINE
DN 20318758
TI Repeated administration of cytosine-phosphorothiolated guanine-containing oligonucleotides together with peptide/protein immunization results in enhanced **CTL** responses with anti-tumor activity.
AU Davila E; Celis E
CS Department of Immunology, Mayo Clinic and Mayo Graduate School, Rochester, MN 55905, USA.
NC R01CA80782 (NCI)
R01CA82677 (NCI)
SO JOURNAL OF IMMUNOLOGY, (2000 Jul 1) 165 (1) 539-47. Journal code: IFB. ISSN: 0022-1767.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals; Abridged Index Medicus Journals
EM 200010
EW 20001001
TI Repeated administration of cytosine-phosphorothiolated guanine-containing oligonucleotides together with peptide/protein immunization results in enhanced **CTL** responses with anti-tumor activity.
SO JOURNAL OF IMMUNOLOGY, (2000 Jul 1) 165 (1) 539-47. Journal code: IFB. ISSN: 0022-1767.
AU Davila E; Celis E
AB The development of therapeutic anti-cancer vaccines designed to elicit **CTL** responses with anti-tumor activity has become a reality thanks to the identification of several tumor-associated Ags and their corresponding peptide T cell epitopes. However, peptide-based vaccines, in general, fail to elicit sufficiently strong **CTL** responses capable of producing therapeutic anti-tumor effects (i.e., prolongation of survival, tumor reduction). Here we report that repeated administration of synthetic oligonucleotides containing foreign cytosine-phosphorothiolated guanine (**CpG**) **motifs** increased 10- to 100-fold the **CTL** response to immunization with various synthetic peptides corresponding to well-known T cell epitopes. Moreover, repeated CpG administration allowed the induction of **CTL** to soluble protein even in the absence of additional adjuvant. Our results indicate that the potentiating effect of CpG in **CTL** responses required the participation of Th lymphocytes. Repeated CpG administration resulted in overt splenomegaly and lymphadenopathy with a significant increase in the numbers of **CTL** precursors and dendritic cells. Protein vaccination in combination with repeated CpG therapy was effective in delaying tumor cell growth and extending survival in mice bearing melanoma tumors. These findings support the contention that repeated administration of CpG-oligonucleotides enhances the effect of peptide and protein vaccines leading to potent anti-tumor responses, presumably through the induction of Th1 and dendritic cells, which are essential for optimal **CTL** responses. The immunostimulatory properties of **CpG motifs** may be key in inducing a consistent long term immunity to tumor-associated Ags when using peptides or proteins as T cell-inducing vaccin

L10 ANSWER 9 OF 22 CAPLUS COPYRIGHT 2001 ACS
AN 1999:281250 CAPLUS
DN 130:324345
TI Immunostimulatory **CpG motifs** trigger a T helper-1 immune response to human immunodeficiency virus type-1 (HIV-1) gp160 envelope proteins
AU Deml, Ludwig; Schirmbeck, Reinhold; Reimann, Jorg; Wolf, Hans; Wagner, Ralf
CS Institute Medical Microbiology, Univ. Regensburg, Regensburg, D-93053, Germany
SO Clin. Chem. Lab. Med. (1999), 37(3), 199-204
CODEN: CCLMFW; ISSN: 1434-6621
PB Walter de Gruyter & Co.
DT Journal
LA English
TI Immunostimulatory **CpG motifs** trigger a T helper-1 immune response to human immunodeficiency virus type-1 (HIV-1) gp160 envelope proteins
SO Clin. Chem. Lab. Med. (1999), 37(3), 199-204
CODEN: CCLMFW; ISSN: 1434-6621
AU Deml, Ludwig; Schirmbeck, Reinhold; Reimann, Jorg; Wolf, Hans; Wagner, Ralf
AB Bacterial DNA sequences contg. unmethylated **CpG motifs** have recently been proposed to exhibit immunostimulatory effects on B, T and NK cells, leading to the induction of humoral and cell-mediated immune responses. The authors investigated the immunomodulatory effects of a CpG-contg. oligodeoxynucleotide (CpG ODN) to the HIV-1 gp160 envelope (Env) protein in the BALB/c mouse model. Priming and boosting of mice with gp160 adsorbed to Al(OH)3 (Alum) induced a typical T helper-1 (Th1)-dominated immune response with high titers of gp160-specific Ig (Ig)G1 isotypes but a weak IgG2a response. Specifically re-stimulated splenocytes from these mice predominantly secreted interleukin (IL)-5 but only minute amts. of interferon-.gamma. (IFN-.gamma.) upon specific re-stimulation. In contrast, a boost immunization of gp160/Alum primed mice with a gp160/Alum/CpG combination resulted in a 7 times higher prodn. of IgG2a antibodies, without affecting the titers of IgG1 isotypes. 10-Fold increased IFN-.gamma., but reduced IL-5, were secreted from gp160-restimulated splenic cells. <30-Fold increase in the levels of specific IgG2a responses and a substantially elevated secretion of IFN-.gamma. were obsd. when the mice received gp160/Alum/CpG combinations for priming and boost injections. Thus, CpG ODNs are useful as an adjuvant to induce a typical Th0/Th1 response to HIV gp160 proteins. Despite the induction of a more Th1-like immune response, gp160/Alum/CpG combinations were not sufficient to prime an Env-specific cytotoxic T-cell (**CTL**) response.
RE.CNT 33
RE
(1) Ballas, Z; J Immunol 1996, V157, P1840 CAPLUS
(2) Bird, A; Nature 1986, V321, P209 CAPLUS
(3) Brinkmann, V; J Exp Med 1993, V178, P1655 CAPLUS
(5) Chu, R; J Exp Med 1997, V186, P1623 CAPLUS
(6) Cox, J; Vaccine 1997, V15, P248 CAPLUS
AL

L10 ANSWER 6 OF 22 CAPLUS COPYRIGHT 2001 ACS
AN 1999:743372 CAPLUS
DN 132:221027
TI CpG DNA as mucosal adjuvant
AU McCluskie, Michael J.; Davis, Heather L.
CS Loeb Health Research Institute, Ottawa, K1Y 4E9, Can.
SO Vaccine (1999), 18(3-4), 231-237
CODEN: VACCDE; ISSN: 0264-410X
PB Elsevier Science Ltd.
DT Journal
LA English
TI CpG DNA as mucosal adjuvant
SO Vaccine (1999), 18(3-4), 231-237
CODEN: VACCDE; ISSN: 0264-410X
AU McCluskie, Michael J.; Davis, Heather L.
AB We have previously found synthetic oligodeoxynucleotides (ODN) contg. immunostimulatory **CpG motifs** to be a potent adjuvant to protein administered by i.m. injection or intranasal inhalation to BALB/c mice. Herein we have further evaluated the potential of CpG ODN as a mucosal adjuvant to purified hepatitis B surface antigen (HBsAg) when administered alone or with cholera toxin (CT). CpG ODN and CT both augmented systemic (humoral and cellular) and mucosal immune responses against HBsAg, and these could be further enhanced with higher doses of adjuvant or boosting. Overall, antibody isotypes with CT alone were predominantly IgG1 (Th2-like) whereas they were predominantly IgG2a (Th1-like) with CpG ODN alone or in combination with CT. Results from this study indicate that stimulatory CpG ODN are promising new adjuvants for mucosal vaccination strategies, whether used alone or in combination with other mucosal adjuvants.
RE.CNT 18
RE
(2) Chu, R; J Exp Med 1997, V186, P1623 CAPLUS
(3) Hazinski, T; Annu Rev Physiol 1993, V55, P181 CAPLUS
(4) Kuper, C; Immunol Today 1992, V13, P219 CAPLUS
(5) Lipford, G; Eur J Immunol 1997, V27, P3420 CAPLUS
(7) Marinaro, M; J Exp Med 1997, V185, P415 CAPLUS
AL

L10 ANSWER 3 OF 22 CAPLUS COPYRIGHT 2001 ACS
AN 2000:446666 CAPLUS
DN 133:175845
TI Repeated administration of cytosine-phosphorothiolated guanine-containing oligonucleotides together with peptide/protein immunization results in enhanced **CTL** responses with anti-tumor activity
AU Davila, Eduardo; Celis, Esteban
CS Department of Immunology, Mayo Clinic and Mayo Graduate School, Rochester, MN, 55905, USA
SO J. Immunol. (2000), 165(1), 539-547
CODEN: JOIMA3; ISSN: 0022-1767
PB American Association of Immunologists
DT Journal
LA English
TI Repeated administration of cytosine-phosphorothiolated guanine-containing oligonucleotides together with peptide/protein immunization results in enhanced **CTL** responses with anti-tumor activity
SO J. Immunol. (2000), 165(1), 539-547
CODEN: JOIMA3; ISSN: 0022-1767
AU Davila, Eduardo; Celis, Esteban
AB The development of therapeutic anti-cancer vaccines designed to elicit **CTL** responses with anti-tumor activity has become a reality thanks to the identification of several tumor-assocd. Ags and their corresponding peptide T cell epitopes. However, peptide-based vaccines, in general, fail to elicit sufficiently strong **CTL** responses capable of producing therapeutic anti-tumor effects (i.e., prolongation of survival, tumor redn.). Here the authors report that repeated administration of synthetic oligonucleotides contg. foreign cytosine-phosphorothiolated guanine (**CpG**) **motifs** increased 10-100-fold the **CTL** response to immunization with various synthetic peptides corresponding to well-known T cell epitopes. Moreover, repeated CpG administration allowed the induction of **CTL** to sol. protein even in the absence of addnl. adjuvant. The authors' results indicate that the potentiating effect of CpG in **CTL** responses required the participation of Th lymphocytes. Repeated CpG administration resulted in overt splenomegaly and lymphadenopathy with an increase in the nos. of **CTL** precursors and dendritic cells. Protein vaccination in combination with repeated CpG therapy was effective in delaying tumor cell growth and extending survival in mice bearing melanoma tumors. Thus, repeated administration of CpG-oligonucleotides enhances the effect of peptide and protein vaccines leading to potent anti-tumor responses, presumably via the induction of Th1 and dendritic cells, which are essential for optimal **CTL** responses. The immunostimulatory properties of **CpG motifs** may be key in inducing a consistent long term immunity to tumor-assocd. Ags when using peptides or proteins as T cell-inducing vaccines.
RE.CNT 46
RE
(1) Alexander, J; Immunity 1994, V1, P751 CAPLUS
(2) Alving, C; J Immunol Methods 1991, V140, P1 CAPLUS
(3) Bendigs, S; Eur J Immunol 1999, V29, P1209 CAPLUS
(4) Boon, T; Annu Rev Immunol 1994, V12, P337 CAPLUS
(5) Boon, T; J Exp Med 1996, V183, P725 CAPLUS
AL

L10 ANSWER 2 OF 22 CAPLUS COPYRIGHT 2001 ACS
AN 2000:857194 CAPLUS
TI APC stimulated by CpG oligodeoxynucleotide enhance activation of MHC class
I-restricted T cells
AU Warren, Thomas L.; Bhatia, Sudershan K.; Acosta, Anna M.; Dahle, Christopher E.; Ratliff, Timothy L.; Krieg, Arthur M.; Weiner, George J.
CS The Holden Cancer Center and Department of Internal Medicine, University of Iowa, Iowa City, IA, 522421, USA
SO J. Immunol. (2000), 165(11), 6244-6251
CODEN: JOIMA3; ISSN: 0022-1767
PB American Association of Immunologists
DT Journal
LA English
TI APC stimulated by CpG oligodeoxynucleotide enhance activation of MHC class
I-restricted T cells
SO J. Immunol. (2000), 165(11), 6244-6251
CODEN: JOIMA3; ISSN: 0022-1767
AU Warren, Thomas L.; Bhatia, Sudershan K.; Acosta, Anna M.; Dahle, Christopher E.; Ratliff, Timothy L.; Krieg, Arthur M.; Weiner, George J.
AB Oligonucleotides contg. unmethylated **CpG motifs** (cytosine-phosphorothioate-guanine oligodeoxynucleotide (CpG ODN)) are potent immunostimulatory agents capable of enhancing the Ag-specific Th1 response when used as immune adjuvants. We evaluated the cellular mechanisms responsible for this effect. Development of a **CTL** response was enhanced when mice were immunized with peptide-pulsed dendritic cells (DCs) treated with CpG ODN. However, in vitro, CpG ODN had no direct effect on highly purified T cells. In vitro, CpG ODN treatment of peptide- or protein-pulsed DCs enhanced the ability of the DCs to activate class I-restricted T cells. The presence of helper T cells enhanced this effect, indicating that treatment with CpG ODN does not obviate the role of T cell help. The enhanced ability of CpG ODN-treated DCs to activate T cells was present but blunted when DCs derived from IL-12 knockout mice were used. Fixation of Ag-pulsed, CpG ODN-treated DCs limited their ability to activate T cells. In contrast, fixation had little effect on DC activation of T cells when DCs were not exposed to CpG ODN. This indicates that prodn. of sol. factors by DCs stimulated with CpG ODN plays a particularly important role in their ability to activate class I-restricted T cells. We conclude that CpG ODN enhances the development of a cellular immune response by stimulating APCs such as DCs, to produce IL-12 and other sol. factors.
RE.CNT 53
RE
(1) Bachmann, M; Eur J Immunol 1996, V26, P2595 CAPLUS
(2) Ballas, Z; J Immunol 1996, V157, P1840 CAPLUS
(3) Bendigs, S; Eur J Immunol 1999, V29, P1209 CAPLUS
(4) Bennett, S; J Exp Med 1997, V186, P65 CAPLUS
(5) Bennett, S; Nature 1998, V393, P478 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 1 OF 22 CAPLUS COPYRIGHT 2001 ACS
AN 2000:874747 CAPLUS
TI CpG DNA is an effective oral adjuvant to protein antigens in mice
AU McCluskie, M. J.; Weeratna, R. D.; Krieg, A. M.; Davis, H. L.
CS Loeb Health Research Institute at the Ottawa Hospital, Ottawa, ON, K1Y 4E9, Can.
SO Vaccine (2000), 19(7-8), 950-957
CODEN: VACCDE; ISSN: 0264-410X
PB Elsevier Science Ltd.
DT Journal
LA English
TI CpG DNA is an effective oral adjuvant to protein antigens in mice
SO Vaccine (2000), 19(7-8), 950-957
CODEN: VACCDE; ISSN: 0264-410X
AU McCluskie, M. J.; Weeratna, R. D.; Krieg, A. M.; Davis, H. L.
AB We have previously reported that synthetic oligodeoxynucleotides contg. immunostimulatory **CpG motifs** (CpG ODN) are potent adjuvants to protein administered by i.m. (IM) injection or intranasal (IN) inhalation to BALB/c mice. Herein, we have evaluated oral delivery of CpG ODN with purified hepatitis B surface antigen (HBsAg) or tetanus toxoid (TT) to det. its potential as an adjuvant to oral vaccines. CpG ODN augmented systemic (IgG in plasma, **CTL**, T-cell proliferation) and mucosal (IgA in lung, vaginal or gut washes, feces and saliva) immune responses against both antigens. CpG stimulated both T-helper type 1 (Th1) (**CTL**, IgG2a) and Th2 (IgG1, IgA) responses when delivered orally. Results from this study indicate that stimulatory CpG ODN may be effective as an adjuvant with oral vaccines.

=> CpG motifs?

L1 398 CPG MOTIFS?

=> hexamer

L2 7943 HEXAMER

=> L1 and L2

L3 0 L1 AND L2

=> inter-nucleotide adj linkage

L4 0 INTER-NUCLEOTIDE ADJ LINKAGE

=> inter-nucleotide

L5 112 INTER-NUCLEOTIDE

=> L5 and L1

L6 0 L5 AND L1

=> CpG motif

L7 497 CPG MOTIF

=> L7 and l5

L8 0 L7 AND L5

=> CTL

L9 25859 CTL

=> L9 and L7

L10 22 L9 AND L7

=> D L10 BIB TI SO AU ABS 1-22